

Manufacturers Record

Industry Construction



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Baltimore, Md.
AUGUST 21, 1930



South Leads Rest of Country in Population Growth

The amazing industrial development of the Southern states during the past several years has been a major factor in the record increase in the South's population, as revealed by the present census. Only a few days ago were the figures available for purposes of comparison by states, and the analysis published elsewhere in this issue brings out some striking results as to the population growth of the South.

In 1920 the South, which already had begun to attract serious attention of national industrialists and investors, had 36,307,000 inhabitants. Today this section has a population in excess of 41,204,000, showing a gain during the past decade of 4,897,000 and leading by more than 800,000 people the increase in the next highest geographical division.

In actual numbers the South's population is more than one-third of the country's total, nearly five times that of New England, 55 per cent greater than the thickly populated Middle Atlantic group of states, 60 per cent more than the population of the East North Central states and nearly three and one-third times the number of inhabitants of the West North Central group.

This veritable empire of the South has a larger population than England, France, Italy, Poland or Brazil—the most heavily populated country in South America—and more than four times the total population of Canada. The increase alone in the South's population in the past ten years is more than the total population of such countries as Cuba or Denmark; nearly twice the population of Norway, almost equal to the total population of Australia, Portugal or Peru; within 1,000,000 of the population of Greece and 61 per cent of the highly industrialized population of Belgium. As in population, so in resources and industrial development the South surpasses entire nations in other parts of the world.

Without a corresponding expansion of industry in its broadest meaning, embracing both agriculture and manufacture, a great population increase would be a calamity. But, as has been emphasized again and again by the Manufacturers Record, the industrial expansion of the South, with its virtually inexhaustible supply of workers, has created employment and an aggregate buying power that has played an important part in this nation's remarkable advancement. In the past ten years the South's demands have progressively increased to supply the needs of its fast-growing population. Not alone are there 5,000,000 more people to be fed, clothed and housed, but the South's expanding manufacturing requirements for materials, supplies and equipment draw upon the productive capacity of the whole country.



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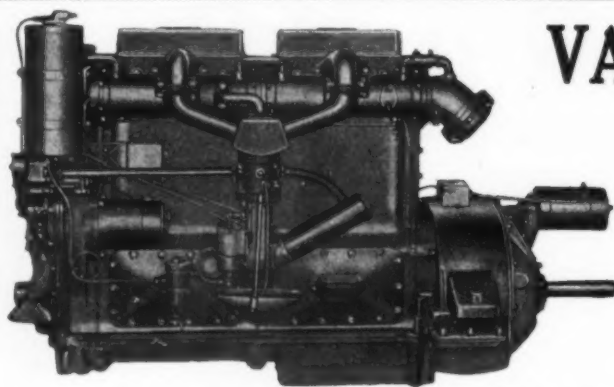
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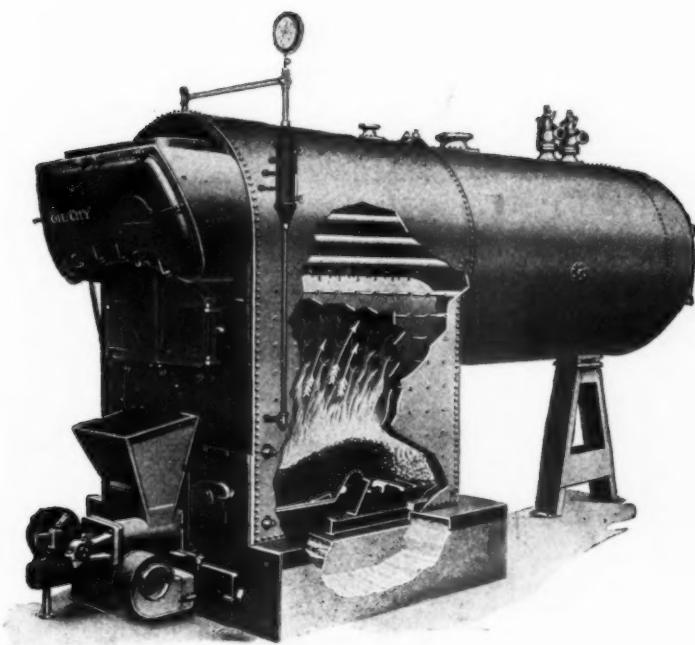
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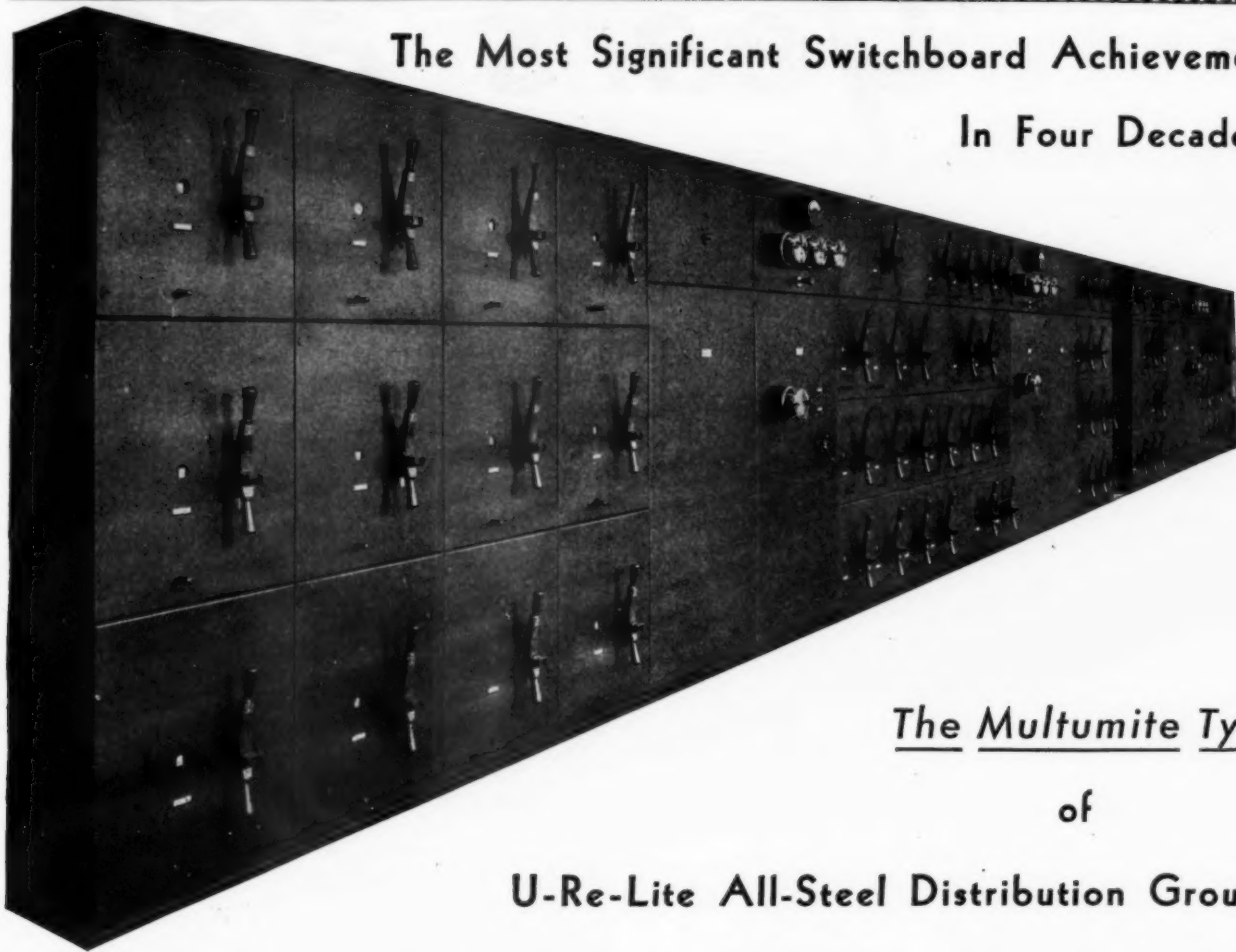
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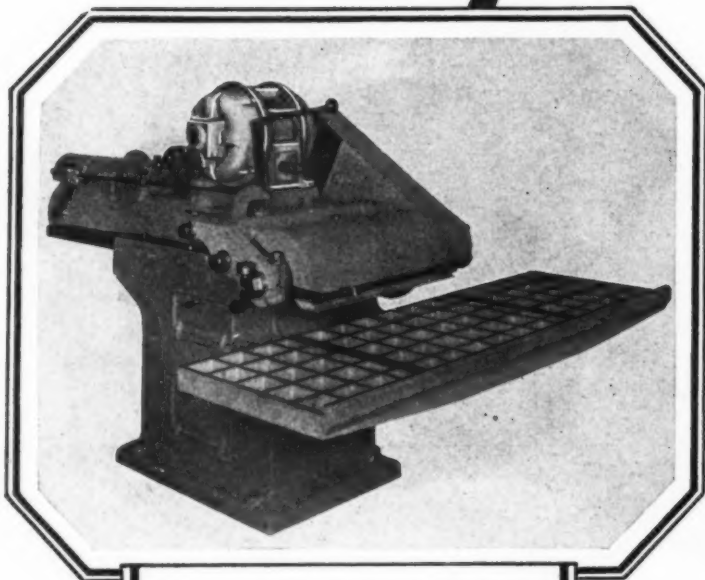
It will pay you to study the application of a Multumite group to your switchboard requirements—get in touch with the nearest I-T-E representative.

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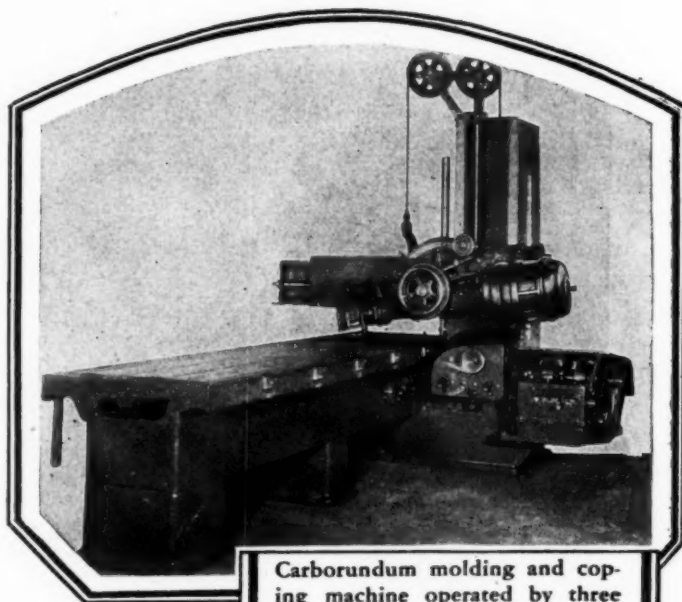
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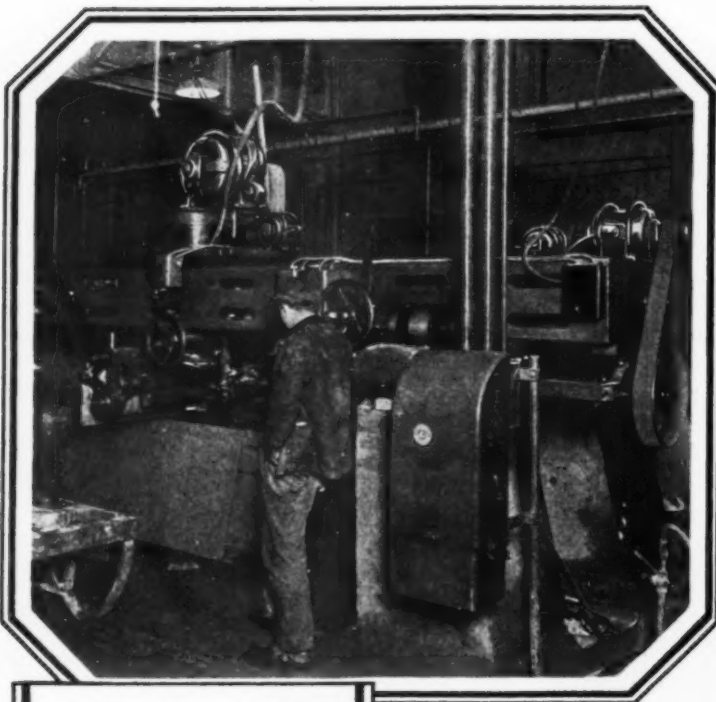
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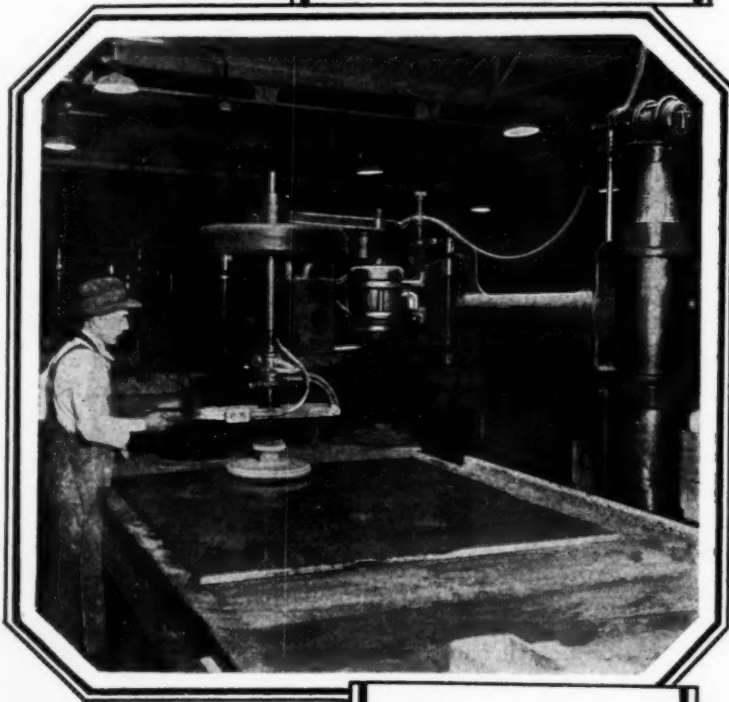
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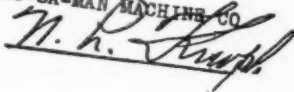
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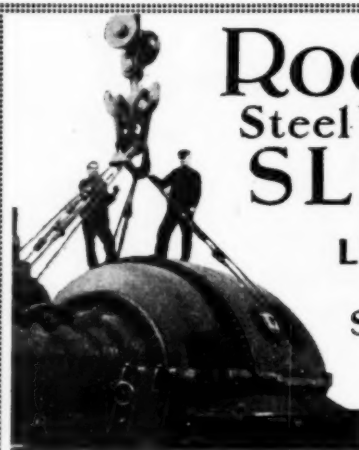
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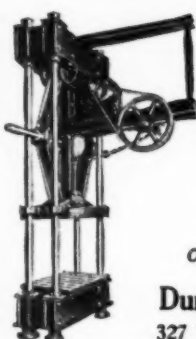
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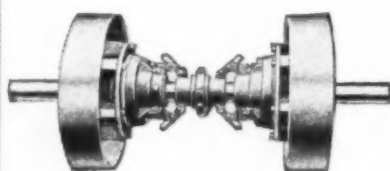
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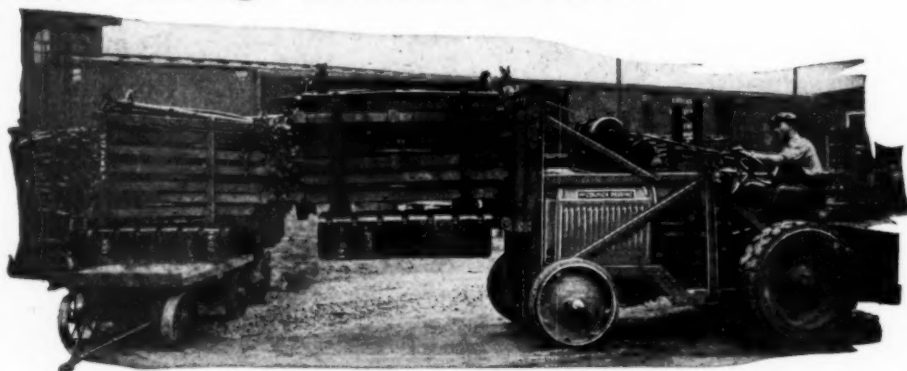
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Industrial trucks and tractors, powered with Exide-Ironclad Batteries, help cut costs and save valuable time. Stock is moved steadily . . . storage space is free for manufacturing . . . shipments are loaded quickly . . . and every truck you use releases from one to ten men for more important jobs.

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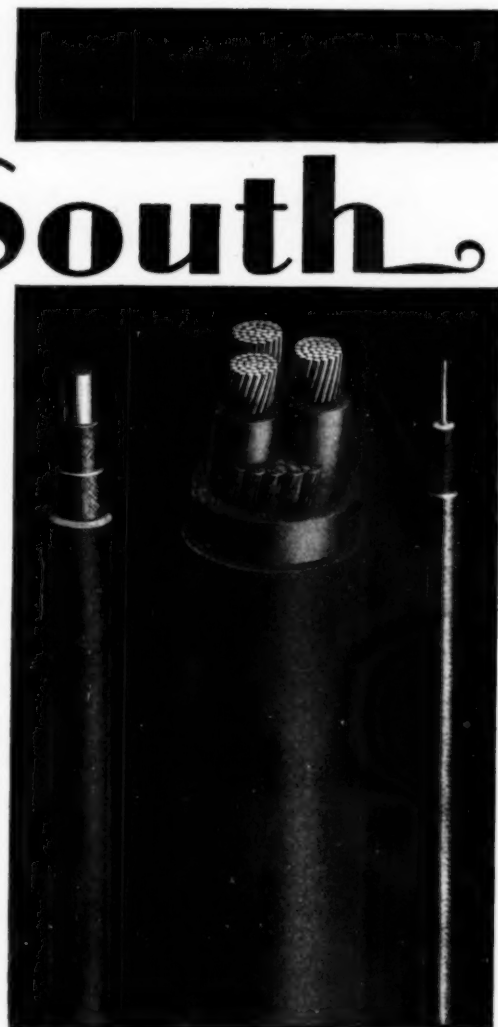
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prove their superiority...



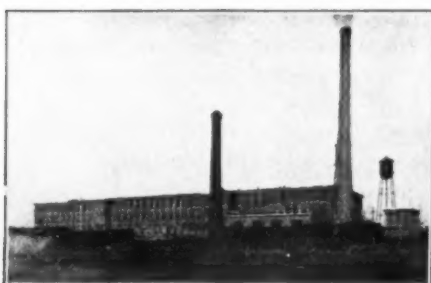
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No matter what your transmission problem may be—whether you need standard or special wires and cables—you will find us ready to serve you—to afford every engineering and manufacturing facility. Today—get in touch with our nearest office.



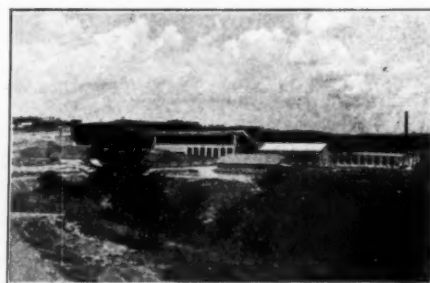
Left—Reliance Weatherproof Wire.
Center—Varnished Cambric Cable.
Right—Rubber Covered Wire.



Ninety-Six Cotton Mills at Ninety-Six, S. C. Engineers: J. E. Sirrine & Co., Greenville, S. C. Electrical Contractors: Huntington & Guerry Inc., Greenville, S. C. Material: American Steel & Wire Company Electrical Wires and Cables.



Piedmont Print Works (Southern Bleachery in background) Taylor, S. C. Engineers: J. E. Sirrine & Co., Greenville, S. C. Electrical Contractors: Huntington & Guerry, Inc., Greenville, S. C. Material: American Steel & Wire Company Electrical Wires and Cables.



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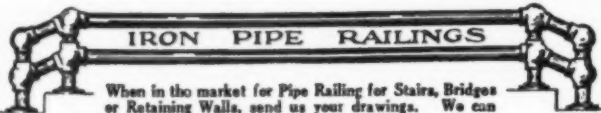
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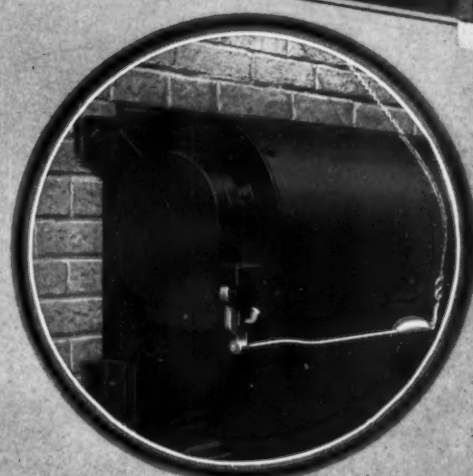
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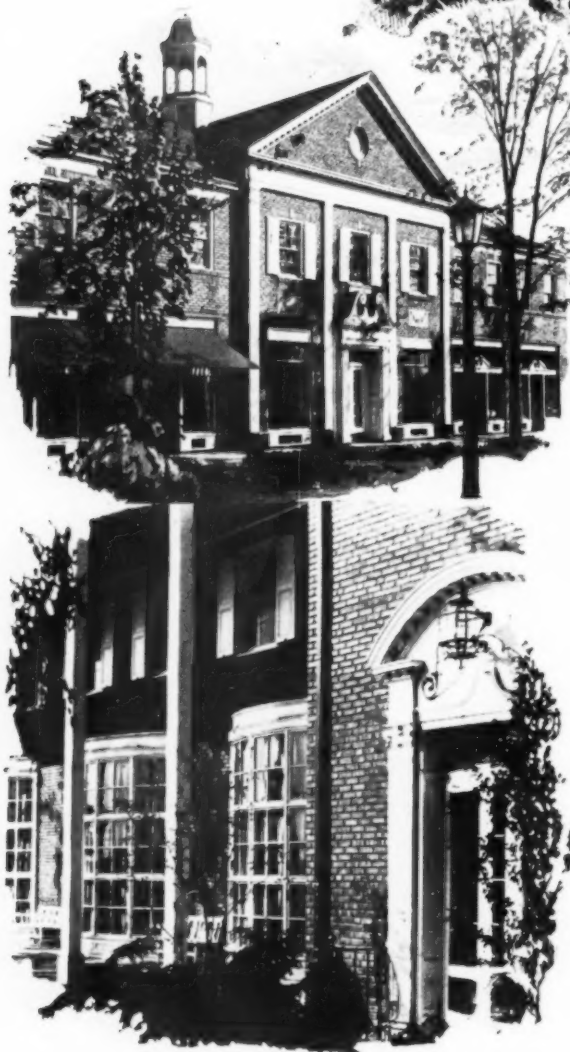
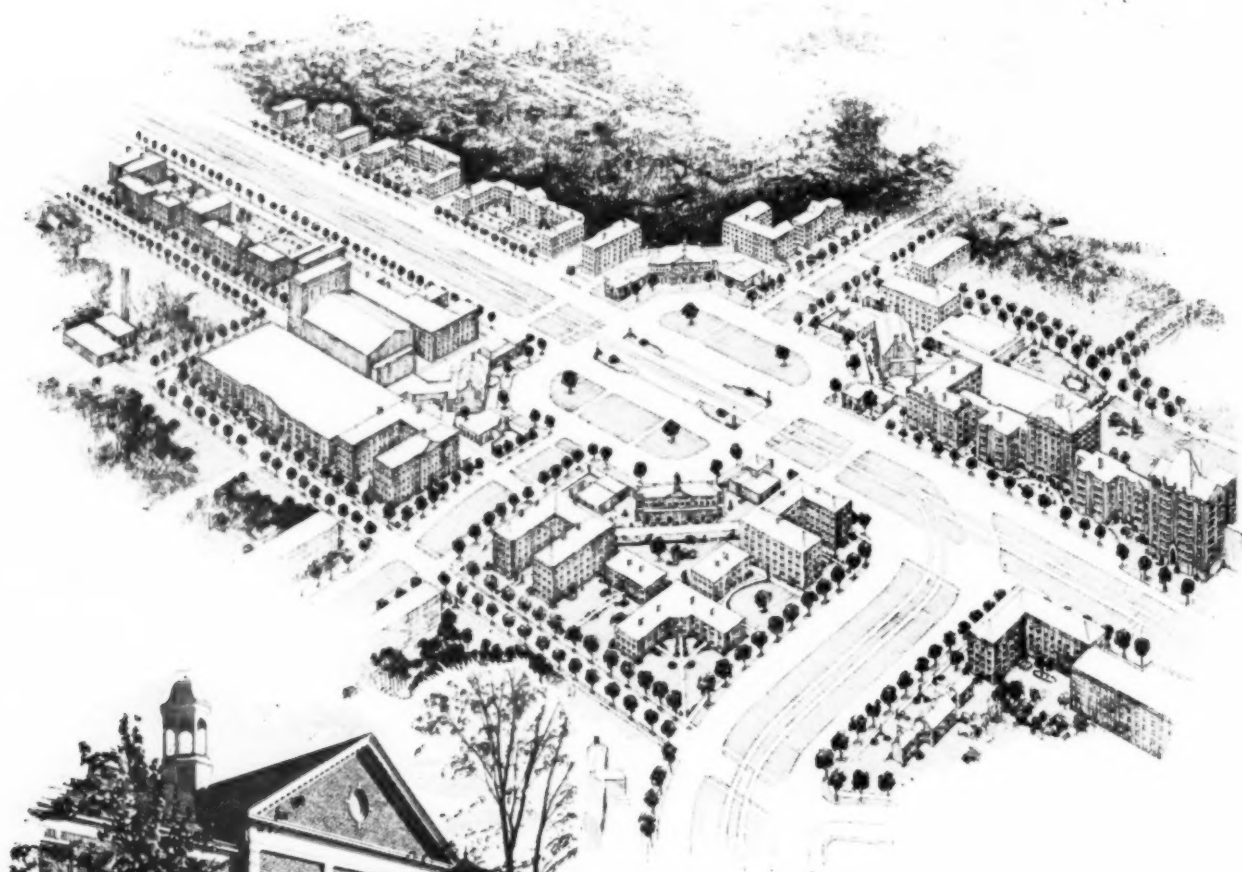
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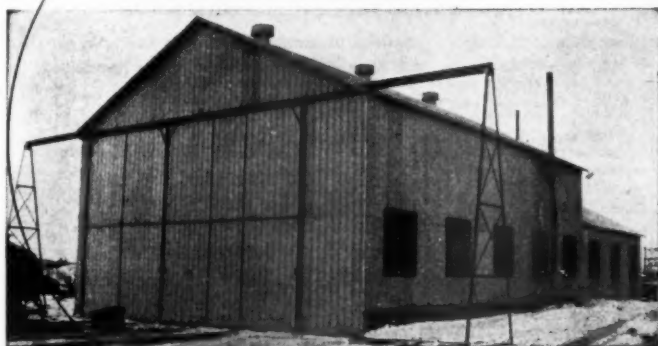
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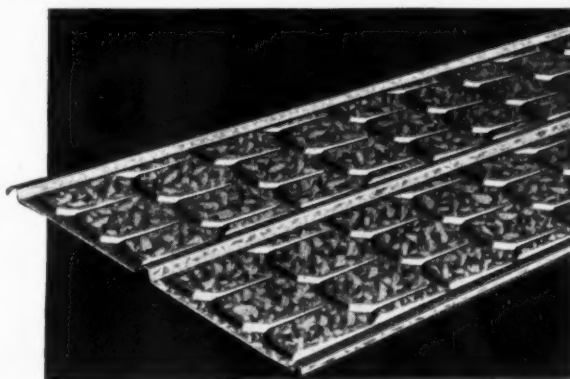
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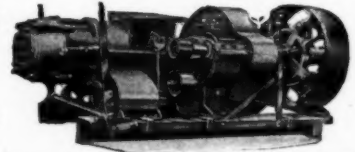
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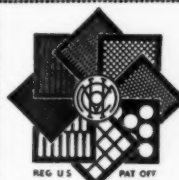
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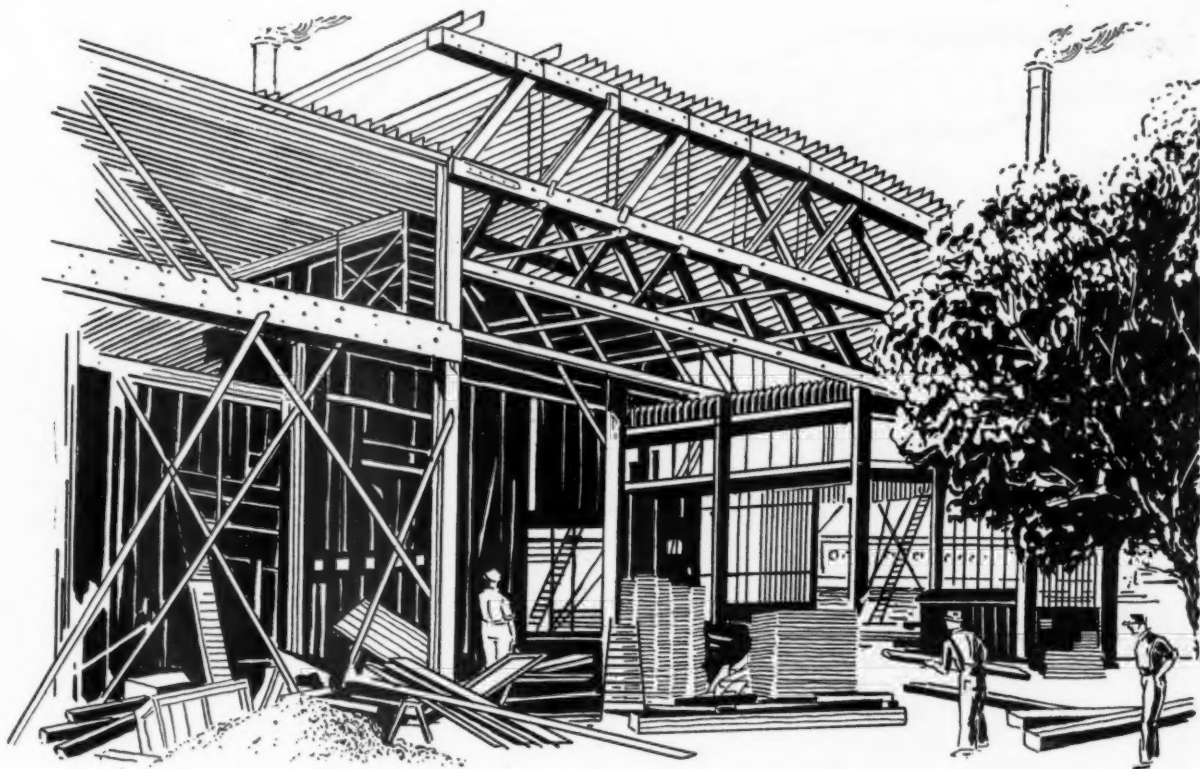
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Chicago, Ill.	2.35	3.25		1.20	1.45	3.50	1.15	.90	.50	2.75	3.00	3.00	1.80	2.55	6.75	1.25	2.55
Cincinnati, Ohio	1.65	3.00	1.20		1.25	4.00	1.15	.60	1.50	2.35	2.55	2.35	2.55	2.15	7.25	1.45	1.80
Cleveland, Ohio	2.15	2.35	1.45	1.25		4.50	.60	1.25	1.65	1.70	1.95	1.80	3.00	1.60	7.75	2.05	1.45
Denver, Colo.	4.50	6.50	3.50	4.00	4.50		4.25	3.75	3.50	6.00	6.25	6.00	2.05	5.75	3.75	3.25	5.50
Detroit, Mich.	2.35	2.55	1.15	1.15	.60	4.25		1.15	1.25	1.95	2.15	2.05	2.75	1.85	7.50	1.95	1.70
Indianapolis, Ind.	1.75	3.00	.90	.60	1.25	3.75	1.15		1.20	2.55	2.75	2.55	2.15	2.35	7.00	1.10	2.05
Milwaukee, Wis.	2.55	3.25	.50	1.50	1.65	3.50	1.25	1.20		3.00	3.00	3.00	1.75	2.75	6.75	1.50	2.55
Newark, N. J.	2.75	1.05	2.75	2.35	1.70	6.00	1.95	2.55	3.00		.50	.15	4.00	.50	9.00	3.25	1.00
New Haven, Conn.	3.25	.70	3.00	2.55	1.95	6.25	2.15	2.75	3.00	.50		.50	4.25	.80	9.25	3.50	1.30
New York, N. Y.	3.00	1.00	3.00	2.35	1.80	6.00	2.05	2.55	3.00	.15	.50		4.25	.50	9.00	3.25	1.05
Omaha, Neb.	3.00	4.50	1.80	2.55	3.00	2.05	2.75	2.15	1.75	4.00	4.25	4.25		4.00	5.25	1.65	3.75
Philadelphia, Pa.	2.55	1.25	2.55	2.15	1.60	5.75	1.85	2.35	2.75	.50	.80	.50	4.00		8.75	3.00	.75
San Francisco, Cal.	7.75	9.50	6.75	7.25	7.75	3.75	7.50	7.00	6.75	9.00	9.25	9.00	5.25	8.75		6.50	8.50
St. Louis, Mo.	1.95	3.75	1.25	1.45	2.05	3.25	1.95	1.10	1.50	3.25	3.50	3.25	1.65	3.00	6.50		2.75
Washington, D. C.	2.35	1.65	2.55	1.80	1.45	5.50	1.70	2.05	2.55	1.00	1.30	1.05	3.75	.75	8.50	2.75	



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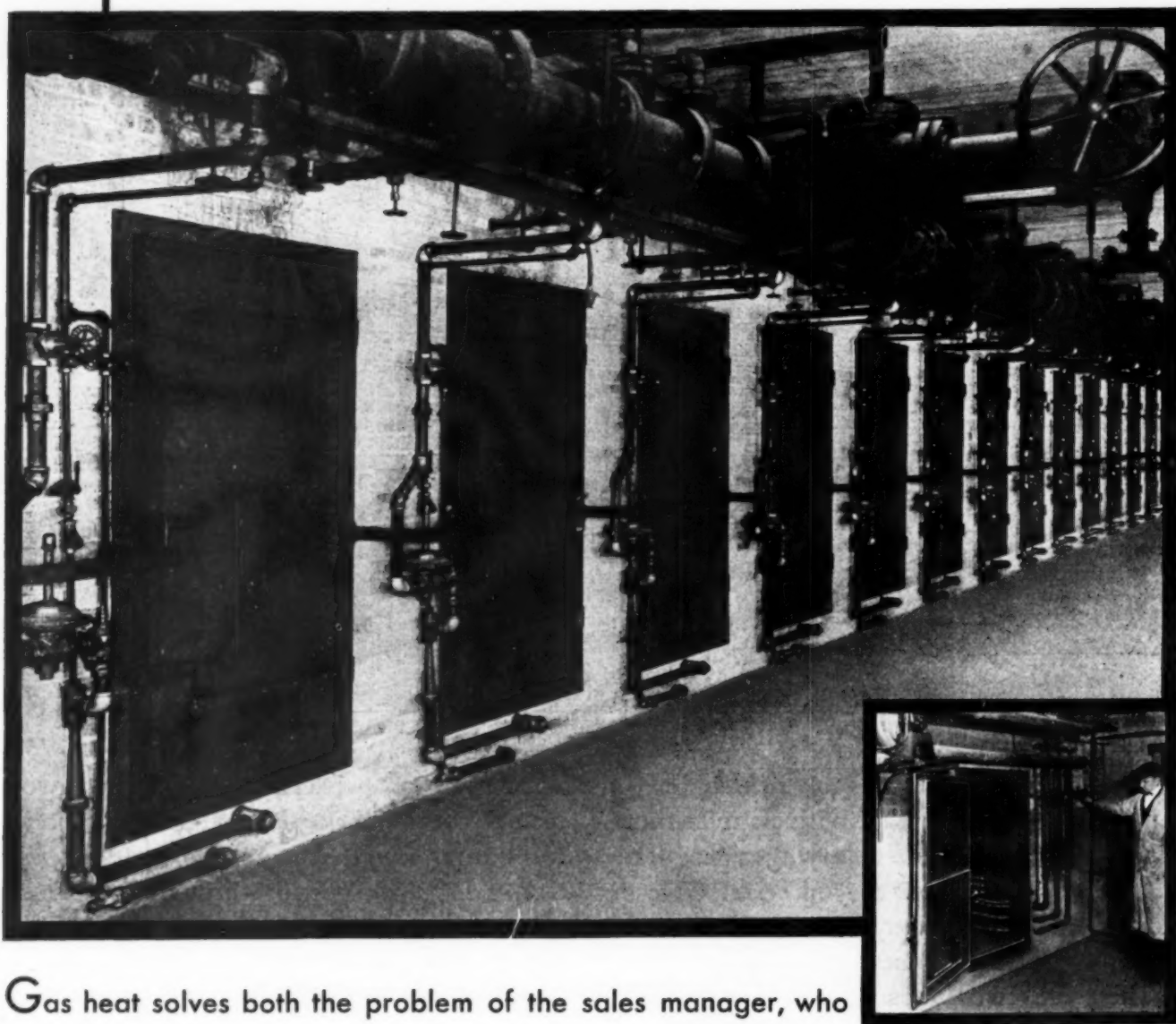


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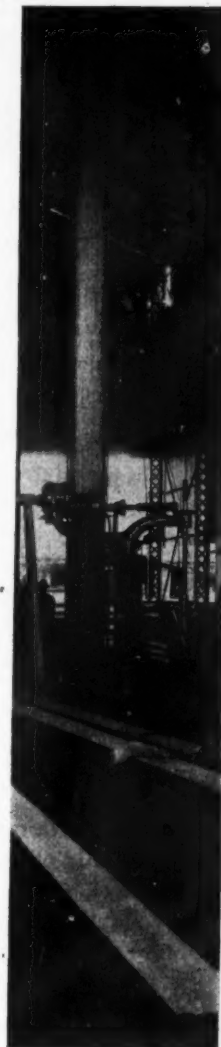
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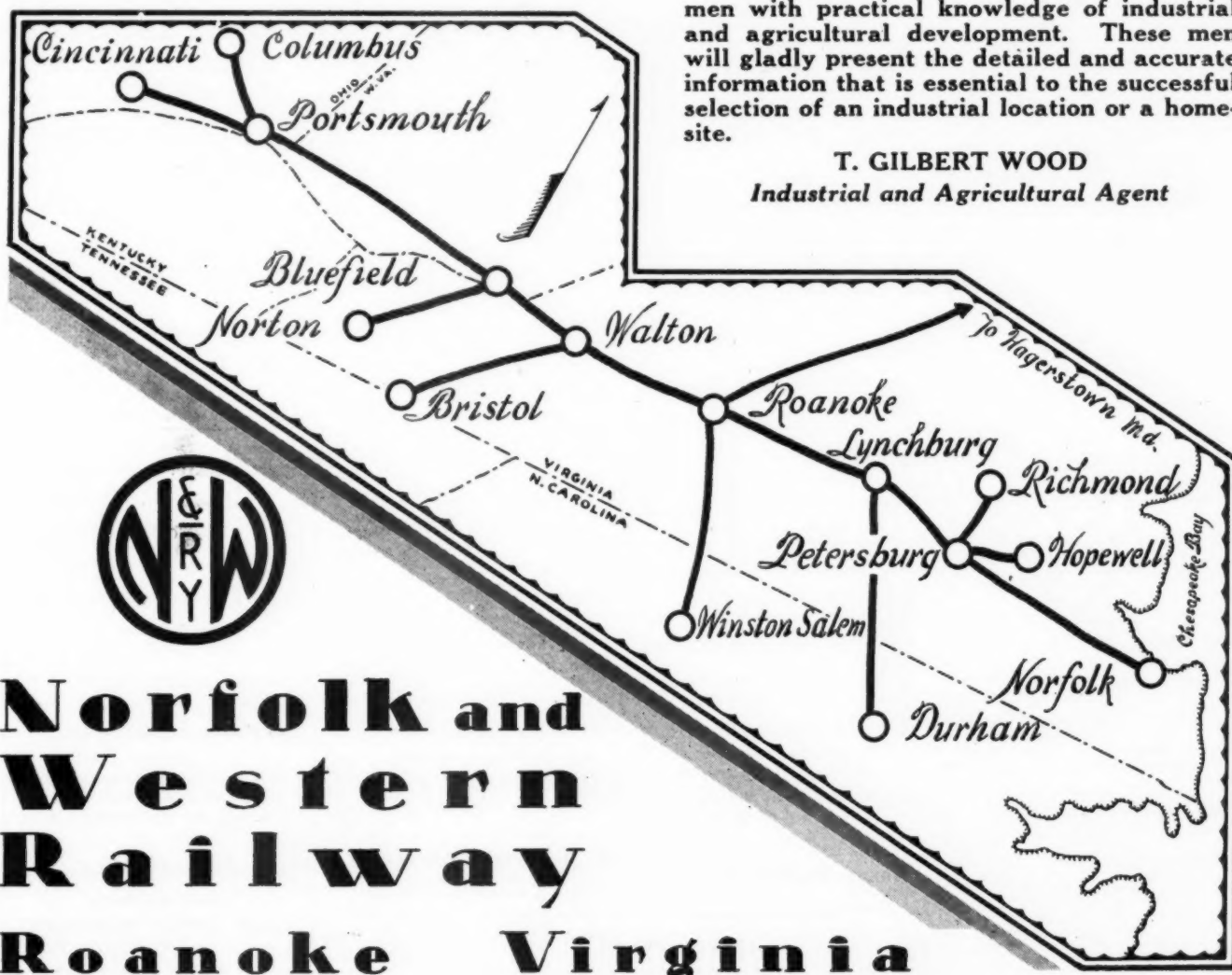
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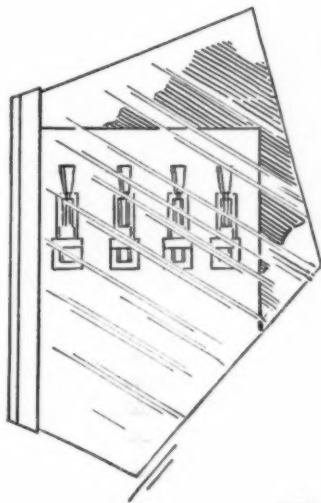
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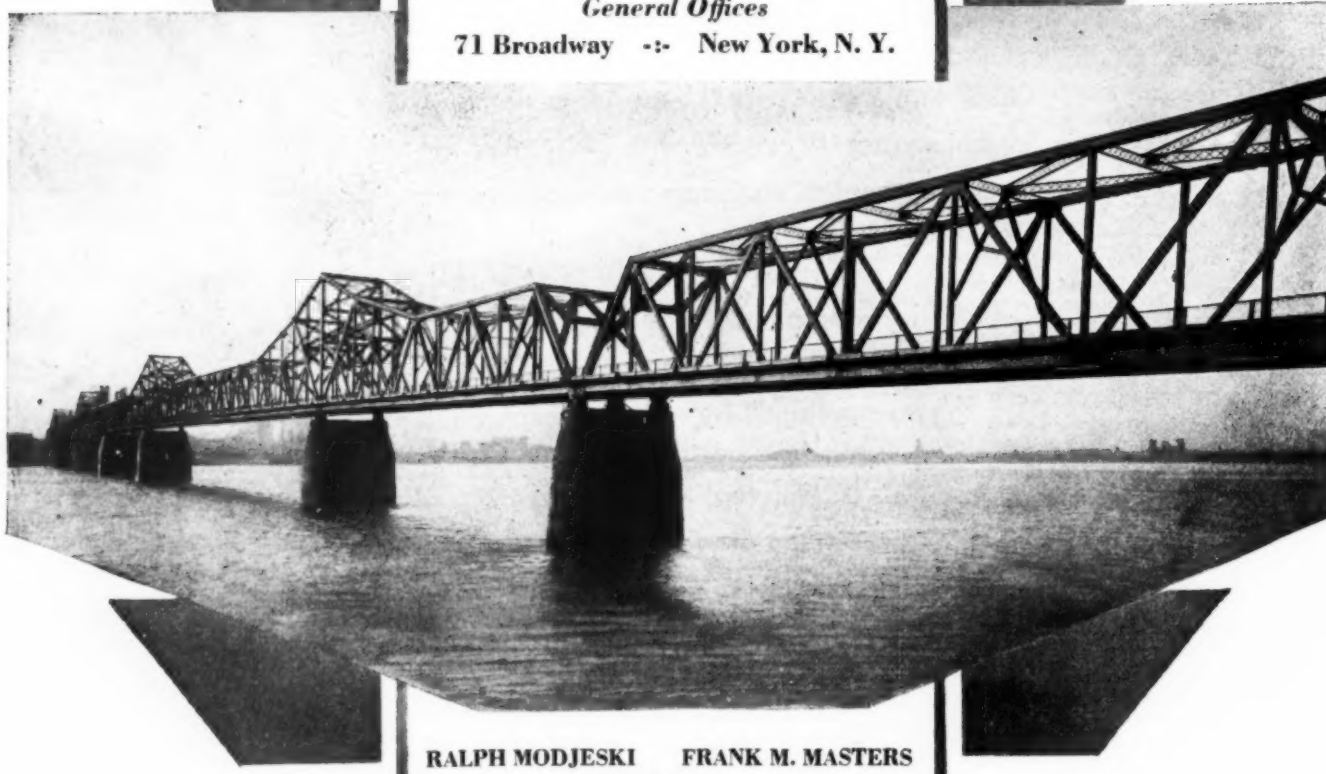
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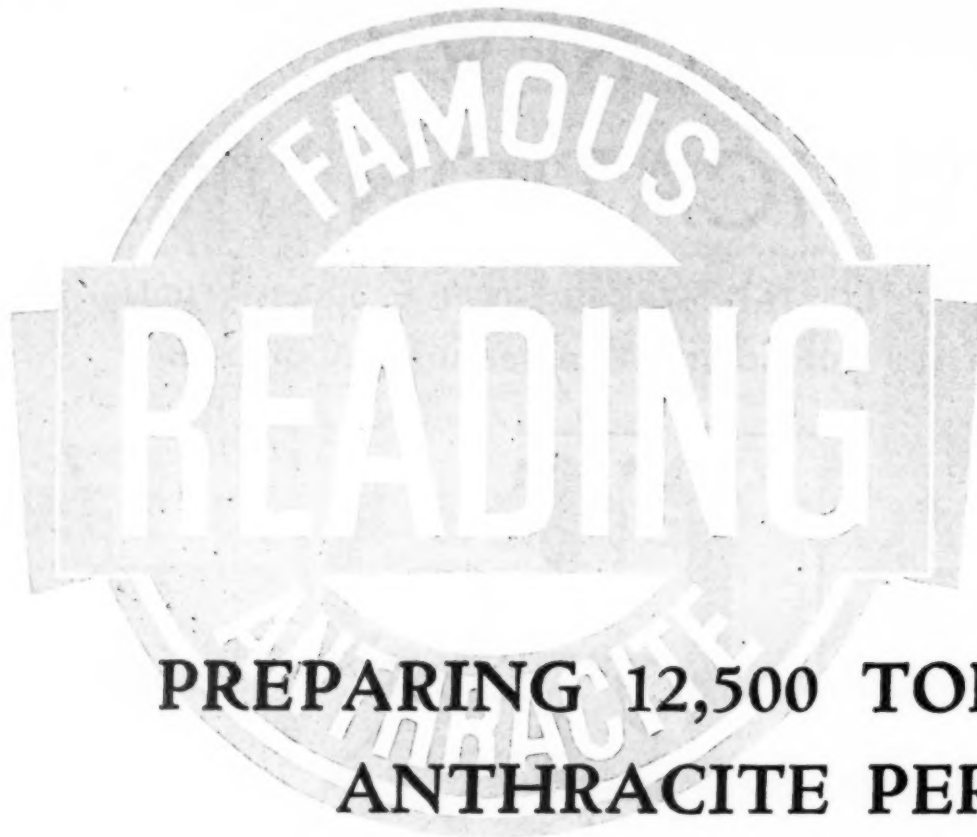
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A SUBSIDIARY of STONE & WEBSTER, INCORPORATED

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Baltimore, Md., August 21, 1930

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Manufacturers Record

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of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVIII No. 8
Weekly

BALTIMORE, AUGUST 21, 1930

{ Single Copies, 20 Cents.
\$6.50 a Year.

Elimination of Unnecessary Costs Will Stimulate Building Operations

EXCEPTIONALLY low prices on building materials, an abundance of easy money and a real need for dwellings and other structures on the one hand, and a movement to stimulate construction on the other, when considered together emphasize the need for study of conditions in the construction industry. In the face of attractive opportunity, building construction seems to hesitate.

Continuance of low prices for building materials is shown in Bradstreet's price index, August 1, which estimates that group at the same low level as of July 1. This group price has been established by a price shrinkage in probably every individual industry in the entire building materials category. As an illustration, a prominent lumber producer reports a cut in No. 2 yellow pine to \$17 last spring and a further cut to \$14 at present, yet adds that "there is absolutely nothing moving." Lack of enthusiasm for building construction may not reasonably be attributed to high cost of materials.

The abundance of easy money actually in the people's hands or at their command in banks is shown in financial reports. Heavy gains in deposits are reported by the savings banks, and hundreds of millions of dollars are reported by other banks and investment sources as looking for employment at low interest rates. Building contractors advertise, "No cash needed," for carpentry work, plumbing, wiring, heating and other factors in home building or repair work; and building and loan associations stand ready to finance new structures with sound liberality. On the surface, it might seem that building operations could be adequately financed on excellent terms.

Real estate authorities report an actual need for residences and buildings of other types in many communities. The lull in construction has been shown not to be due to general over-building of residences or other structures.

In the face of these favorable factors in structure-construction circles, why do building operations hesitate?

For one thing, Herbert U. Nelson, executive secretary of the National Association of Real Estate

Boards, suggests to the MANUFACTURERS RECORD that "distribution costs for building materials are undoubtedly high," and also he finds many points at which savings could be effected.

Notwithstanding the abundance of money seeking employment, Mr. Nelson calls attention to the method of real estate financing now prevalent and its costs, and adds:

"The average man who buys a home signs a contract which he knows at the time he is not in a position to carry out. He usually agrees to pay off a second mortgage in two or three years and nearly always agrees to pay off a first mortgage in from three to seven years. This he cannot do. He assumes that at the time his mortgage or mortgages come due, he will be able either to renew or refinance. This assumption is not always justified. Moreover, the necessity of renewing or refinancing is costly."

As a constructive suggestion there is pictured a system of home financing which takes into account the fact that a dwelling is for most persons a capital investment which will require at least 15 or 18 years to pay out. The Metropolitan Life Insurance Company and the Equitable Life and some other investors already are beginning to make 15-year loans on homes, to be completely amortized in that period. The subject also is to be investigated by a committee named by President Hoover, who finds that property mortgages have been affected by competition with bonds and other forms of investment, and that second mortgages are expensive to float.

In contrast with some other observers, Mr. Nelson believes that the remedy for the relatively high cost of home building does not lie necessarily in the direction of reducing wages. As the Journal of Commerce sees it, high construction costs are due largely to "the excessive wages paid to union labor and the extraordinarily short hours worked by such labor," which in some places "prohibits any work on Saturdays, except at double rates." A suggestion has been advanced that the union wage scale in the construction field is more than ever out of line with the prevailing labor rates in other industries.

Last year, according to the National Industrial Conference Board, bricklayers averaged \$1.65 an hour, and plasterers averaged \$1.635. The board's study on

"Wages in the United States, 1914-1929," included 17 building trades in 23 cities, and the average rate for the 17 trades combined in 1929 was \$1.185 per hour. Contrast that average with the average daily wage paid to farm labor in the South, \$1.55 a day, which is about 15 cents an hour for a 10-hour day. Even common labor in the building trades surveyed received an average rate of 70 cents an hour as against an average of \$2.23 a day for farm labor throughout the country.

The effect of labor in the general situation is emphasized by Mr. Nelson from another viewpoint when he says:

"To illustrate, six or seven different handicraft trades are employed in the ordinary bathroom on the site.

"We feel that the whole process of erecting a house by assembling the materials on the site and putting them together by hand should be carefully studied from a technological standpoint and better methods be developed. We do not want a standardized house. We believe, however, that it is possible to maintain flexibility of design and architecture and still move many processes now carried on at the site back into the factory.

"A number of architects and engineers feel that it would not be difficult to develop, for instance, a type of bathroom manufactured in a few large pieces, practically complete, which could be assembled in a few hours on the site. There are many similar opportunities that have not been studied."

In other words, while too many dollars may not be paid to the individual construction worker, too many dollars are being paid to entirely too many workers in a multiplicity of trades. And the result of this labor arrangement, it appears, will be the completion of much work at factories which now is done by labor in the course of putting up a residence or other structure.

No true American advocates pay reduction for any workers when such reduction can properly be avoided; and it may be that the labor multiplication cited is responsible for a union labor unemployment rate of 37 per cent in the building trades as compared with 21 per cent for all union workers as a whole, as recently announced by President Green of the American Federation of Labor.

Mr. Nelson points out that "another very serious cause of the decline in home ownership is our archaic local tax system. There is little theoretical or practical justification for the ad valorem tax on real estate as a method of financing the majority of local community requirements. The result of the present local tax system everywhere is to penalize home ownership."

This is more or less a controversial subject on which several varieties of views are entertained.

Reasons for the reputed high cost of residences and other buildings should be clearly ascertained, so that remedial measures may be applied and employment be promoted by resultant stimulation of the great building industry. More building would open the way for greater employment in all lines.

We sleep, but the loom of life never stops. And the pattern which was weaving when the sun went down is weaving when it comes up tomorrow.—Beecher.

Advertising Works While Business Dozes

IN "just a little optimistic line," William H. Rankin, advertising expert, tells readers and advertisers that "business is better and will be much better still by the middle of September, and especially for those who use advertising intelligently and persistently." It required strong faith and belief to impel "nearly every one" of the Rankin Company's customers to spend "more money—much more, in advertising in the first six months of this year, compared with last; but they did, and they are not sorry now. This year, of all years, advertising should be kept at work, telling consumers why they should buy advertised products."

Paradoxical as it may sound, advertising in dull periods sells huge amounts of goods to customers who do not buy—that is, customers who do not buy at the time. The advertising which is read in such periods sinks in, and the potential customer knows just what he wants to buy and from whom he wants to buy it when business revival begins. As Mr. Rankin puts it:

"In times like these, during the past 20 years I have noticed that advertisers who redouble their advertising and sales activities are those that become leaders and maintain leadership thereafter."

On an index figure of 100 for 1919, the Curtis Publishing Company presents charts which show:

The net profits of 30 companies which increased their magazine advertising in the deflation year, 1921, did not drop below the index figure 80 for that year, and rose rapidly to 160 in 1924.

For 46 companies which decreased their advertising in that year of business depression, the net profits indexed at 100 in 1919 were transformed into heavy deficits in 1921, and staggered slowly back to the 1919 level in 1923 and ran a trifle below that level in 1924.

Florida Bond Situation

THE question of how to remedy Florida's municipal bond situation is receiving serious attention, both within and without financial circles. With all the suggestions now being made, there should be evolved some method or plan for bringing about a solution of the problem. In an article in this issue, Guy M. Walker, who has had long experience in refinancing and rehabilitating private business enterprises, presents some constructive suggestions, justifying close study by those interested in the State of Florida. His comprehensive plan, as roughly outlined, seems to have merit. Private interests are reported to be seeking to purchase municipal bonds at a big discount for the purpose of getting the municipalities then to refund on the purchase price plus a 10 per cent profit. The question might be asked, why would it not be logical for a state commission in similar manner to aid in working out refinancing of the cities?

However, there are some obstacles to be overcome. In the first place, the State Constitution would have to be amended. The proposal of Mr. Walker calls for a special session of the legislature and, as we under-

stand it, a Constitutional Amendment cannot be submitted at a special session, and even when submitted at a regular session must be approved by the people in the general election. Such a legislative procedure, of course, would take considerable time and the time element is a most important factor, if the immediate relief necessary is to be secured. A committee is working on new sources of revenue which should help not only to meet the situation, but likewise to relieve the tax-burdened real estate. Also, the state is sending back \$4,500,000 of gasoline tax collections a year to the counties for the use of road and bridge bonds, and this amount could probably be increased somewhat. The feasibility of utilizing the new sources of revenue as suggested by Mr. Walker should receive consideration by the coming Florida Legislature.

Would Make Annual Expositions Biennial

THE advisability of certain industries, or groups of industries, holding biennial instead of annual expositions is suggested by A. F. Davis, vice-president of the Lincoln Electric Company, Cleveland, Ohio, in a note to the MANUFACTURERS RECORD, saying, in part:

"As you know, it is getting to the point where the expense of the various expositions is quite a burden to the manufacturer. I doubt very much whether any manufacturer wishes to exhibit at the same show every year, but he is almost obliged to do so for the establishment of prestige.

"I wonder if it would not be a good idea to start some agitation for having these shows every other year, instead of every year. This is being done in some cases and, I believe, is meeting general approval."

As an observer on the sidelines, as well as a participant in expositions of many kinds in various places, the MANUFACTURERS RECORD passes on Mr. Davis' suggestion with the thought that possibly it will bring forth the views of other firms in a variety of industries, views which would be of value in a discussion of the subject.

The biennial policy has been put into effect, for instance, by the Southern Textile Exposition, featuring equipment, supplies and new practices of the industry; this exposition is now held in alternate years with great success for the exposition and to the satisfaction of individual exhibitors. No doubt there are other industries or organizations which also have adopted the custom, for in many industries the adoption of new inventions and creation of new products is not possible every year, and there is no incentive for the public to participate. The responsibility in annual expositions is not of a financial nature alone, but involves also the strain on the imagination and ingenuity of the exhibitors. New equipment must be shown each year, or the arrangement of standard products must be ingeniously juggled, to attract attention.

In the end, the decision as to whether certain expositions should be held annually, biennially or whether they should be held at all rests upon the individual concerns within the industry. When such shows are no longer profitable to the exhibitors they will be abandoned.

Time to Buy

WIDESPREAD acceptance of the MANUFACTURERS RECORD's view that pessimism at present is the greatest obstacle to hastening business revival, leads to consideration of the cause for this depression of public spirit and study for a corrective.

Over-production by manufacturers, the stock market collapse and consequent cessation of buying by the public are the causes. Hundreds of thousands suffered material losses in the stock market. Their buying power was seriously impaired thereby. It takes time to bring men (and women too) to an optimistic frame of mind after experiencing the actual money losses sustained from the stock price collapse of last fall.

Necessary buying by the public has made great inroads upon the surplus of goods caused by over-production. The fever of stock speculation has run its course. The market today is largely professional. People are cautiously buying goods to meet their seasonal needs. So that the immediate causes of depression in trade and morale have been virtually removed.

Psychology now enters in and may be said to be the chief remaining cause of such pessimism as still prevails. The psychology of pessimism is not easy to correct. It is a form of "passive resistance." Optimism and confidence are open to attack by destructive forces, political or demagogic or other; but pessimism, negative in nature, offers no actual target at which to shoot with the arrows of truth and facts.

As stated, it takes time to affect it, but unless all signs fail, with the progressively increasing indications of improved conditions the pessimist soon will recognize that business is actually getting better.

We have called attention to the fact that so far as the South is concerned the sale of public improvement bonds showed a 40 per cent gain in the first six months of 1930 as over the same period of 1929. Also, that construction contracts awarded in the South in July were 60 per cent higher than in July a year ago.

It is worth repeating that savings bank deposits show an increase of \$700,000,000, while last year they dropped \$82,000,000. Bankers comment on the fact that debts are being more generally paid than for a long time past. Money continues cheap and abundant, and soon the people who are hesitating will begin to purchase.

Building can be done better and cheaper now than for years past. Work will be more carefully done than in rush times. Municipalities and state governments should use the opportunity to contract for necessary improvements, while individuals may very well regard the present as an opportune time to do the things they have been putting off. Prices are at a point where conservative buying and building and expenditures for necessary things can be safely entered upon. In fact, a trend upward in the price level is indicated, with increases reported for building material and as a result of the drought, food prices are likely to go higher. Therefore, the commodity price decline which has caused a "holding back" in buying seems to have run its course, and with prices advancing business should improve.

South's 41,204,000 Population Is One-Third of Country's Total

Gains Nearly 5,000,000 Inhabitants in Ten Years—Has Larger Increase Than Any Other Section of the Country and Represents About 29 Per Cent of Total Population Growth of the United States

By

HOWARD L. CLARK.

nearly 24 per cent. The pronounced increase in Florida resulted from the impetus given to the State's development

BASED on preliminary figures issued by the Census Bureau, the total population of the South, as of the census of 1930, is 41,204,283, as compared with 36,306,855 in 1920. This is an increase in actual numbers of 4,897,428, which is the largest gain reported for any of the geographical divisions of the country. The total population of the continental United States in 1930 is 122,698,190, or a gain of 16,987,570 compared with the census of 1920. Therefore, the South's growth in population of 4,897,428 during the last decade is 28.8 per cent of the country's total gain.

In actual numbers the South has more than one-third of the country's population, nearly five times the population of New England, 55 per cent more people than the combined population of New York, New Jersey, Pennsylvania and Delaware, 64 per cent more than the total population of the East North Central states of Ohio, Indiana, Illinois, Michigan and Wisconsin, and nearly three and one-third times the population of the West North Central group of states.

The Middle Atlantic division was next to the South in reported numerical increase in population, showing a gain of 4,042,565, of which 2,234,000 was the gain in New York State. There was a gain of 3,770,000 in the East North Central states, and only 526,200 more people were reported in the West North Central states in 1930 than in 1920. The Pacific Coast reported an increase of 2,619,000, of which 2,245,000 were California's contribution to the country's population growth. The New England states had a gain of only 769,000 in population, and the lowest increase was for the mountain states of the West with 362,320 additional inhabitants.

It was to be expected with the enormous industrial development of the South during the past few years that this section would make a striking showing in its population figures. There has been manufacturing expansion in every Southern state, notably in North Carolina, which partly accounts for that

State's gain of 611,164 inhabitants, or

POPULATION OF UNITED STATES BY STATES AND GEOGRAPHIC DIVISIONS, 1920-1930, NUMERICAL AND PERCENTAGE OF INCREASE SINCE 1920.

(Compiled from the Bureau of Census Preliminary Population Figures.)

States and Geographic Divisions	Final Census 1920	Preliminary Census 1930	1920-1930	
			Increase Number	Increase Per Cent
Alabama	2,348,174	2,645,297	297,123	12.7
Arkansas	1,752,204	1,853,981	101,777	5.8
District of Columbia	437,571	486,869	49,298	11.3
Florida	968,470	1,466,625	498,155	51.4
Georgia	2,895,832	2,902,443	6,611	0.2
Kentucky	2,416,630	2,653,668	237,038	9.8
Louisiana	1,798,509	2,094,496	295,987	16.5
Maryland	1,449,661	1,629,321	179,660	12.4
Mississippi	1,790,618	2,007,979	217,361	12.1
Missouri	3,404,055	3,620,961	216,906	6.4
North Carolina	2,559,123	3,170,287	611,164	23.9
Oklahoma	2,028,283	2,391,777	363,494	17.9
South Carolina	1,683,724	1,732,567	48,843	2.9
Tennessee	2,337,865	2,608,759	270,874	11.6
Texas	4,663,228	5,821,272	1,158,044	24.8
Virginia	2,309,187	2,419,471	110,284	4.8
West Virginia	1,463,701	1,728,510	264,809	18.1
South	36,306,855	41,204,283	4,897,428	13.5
Maine	768,014	800,056	32,042	4.2
New Hampshire	443,083	465,293	22,210	5.0
Vermont	352,428	359,092	6,664	1.9
Massachusetts	3,852,356	4,253,646	401,290	10.4
Rhode Island	604,397	687,232	82,835	13.7
Connecticut	1,380,631	1,604,711	224,080	16.2
New England	7,400,900	8,170,030	769,121	10.4
New York	10,385,227	12,619,503	2,234,276	21.5
New Jersey	3,155,900	4,028,027	872,127	27.6
Pennsylvania	8,720,017	9,640,802	920,785	10.6
Delaware	223,003	238,380	15,377	6.9
Middle Atlantic	22,484,147	26,526,712	4,042,565	18.0
Ohio	5,759,394	6,639,837	880,443	15.3
Indiana	2,930,390	3,225,600	295,210	10.1
Illinois	6,485,280	7,607,684	1,122,404	17.3
Michigan	3,668,412	4,842,280	1,173,868	32.0
Wisconsin	2,632,067	2,930,282	298,215	11.3
East North Central	21,475,543	25,245,683	3,770,140	17.5
Minnesota	2,387,125	2,566,445	179,320	7.5
Iowa	2,404,021	2,467,900	63,879	2.7
North Dakota	646,872	682,448	35,576	5.5
South Dakota	636,547	690,755	54,208	8.5
Nebraska	1,296,372	1,378,900	82,528	6.4
Kansas	1,769,257	1,870,946	110,689	6.3
West North Central	9,140,194	9,666,394	526,200	5.8
Montana	548,889	536,332	*12,557	-2.3
Idaho	431,806	445,837	13,971	3.2
Wyoming	194,402	224,597	30,195	15.5
Colorado	939,629	1,035,043	95,414	10.2
New Mexico	360,350	427,216	66,866	18.6
Arizona	334,162	435,833	101,671	30.4
Utah	449,396	502,582	53,186	11.8
Nevada	77,407	90,981	13,574	17.5
Mountain	3,336,101	3,608,421	272,320	8.2
Washington	1,356,621	1,561,967	205,346	15.1
Oregon	783,389	952,601	169,212	21.6
California	3,426,801	5,072,009	1,645,208	48.0
Pacific	5,566,871	8,186,667	2,619,796	47.1
United States	105,710,620	122,698,190	16,987,570	16.1

*Decrease.

by the real estate boom of several years ago. Texas' population increase is attributable to the general advancement of the State; not only has agriculture expanded through the opening up of fruit and vegetable farming areas, but its manufacturing growth has been of a substantial character. During the last ten years the South's possibilities for development have been more generally appreciated than ever before. The great industrial leaders of the country are increasingly realizing the advantages offered in the South for establishment of a wide variety of industries, because of this section's immense raw material resources and ever-expanding power facilities which, with a large labor supply, offer attractions to the manufacturer and investor that cannot be ignored.

Of the individual Southern states the greatest increase in numbers was reported in Texas, which has a total population of 5,821,000, a gain of 1,158,000, or 24.8 per cent, since 1920. Florida, with an increase of 498,155, had the largest population percentage increase, (51.4), in the South. Oklahoma, with a population increase of 363,494, showed an increase of nearly 18 per cent. Mis-

issippi, which in the census of 1920 reported a smaller population than in the previous ten years, showed a gain in 1930, compared with 1920, of 217,361, or 12.1 per cent. Georgia is at the bottom of the list with a gain of only 6611 in population.

Although the figures are subject to revision, no considerable changes are expected. Numerical gain in population for the continental United States is shown to be larger for the decade preceding 1930 than for any previous decade. More than one-quarter of the total increase in population of the United States was concentrated in two states, California in the West and New York in the East; while, as stated, the South had nearly 29 per cent of the country's population gain. Three other states—Michigan, Texas and Illinois—each accounted for more than 1,000,000 of the increase. Pennsylvania gained more than 900,000 and Ohio and New Jersey each reported an increase of over 870,000. Montana was the only State in the Union which reported a loss in population in 1930 compared with 1920; there were 12,557, or 2.3 per cent fewer people in Montana in 1930 than there were in 1920.

Individual Southern cities likewise have made substantial growth in population since 1920. Of the 93 cities in the country above the 100,000 census mark in 1930, 23 are in the South. Heading the list in percentage growth of the 93 is Miami, Fla., with 272.1 per cent. The following shows the total population in 1930 of Southern cities with over 100,000 population, their percentage of increase since 1920 and their rating in 1930:

City	Preliminary Census, 1930	Percentage Increase Since 1920	U. S. Rating 1930
St. Louis	822,032	9.2	7
Baltimore	801,741	9.2	8
New Orleans ...	455,792	17.7	16
Kansas City ...	392,640	21.9	19
Atlanta	347,991	73.4	22
Louisville	307,808	31.1	25
Houston	289,428	109.3	28
Dallas	260,397	63.8	33
Birmingham ...	257,657	44.1	34
San Antonio ...	254,562	57.7	36
Memphis	252,049	55.2	37
Richmond	182,883	6.5	43
Oklahoma City..	182,845	100.3	44
Fort Worth	160,892	51.2	49
Nashville	153,153	29.4	51
Tulsa	141,281	96.0	58
Jacksonville ...	129,682	41.6	62
Norfolk	127,808	10.8	63
Chattanooga ...	119,539	106.4	67
Miami	110,025	272.1	77
Knoxville	105,797	26.0	80
El Paso	101,975	21.5	89
Tampa	100,910	95.5	92

South Offers Help to Drought Areas

OFFERS of practical help by the South to drought-stricken areas of the Nation were reported to the MANUFACTURERS RECORD from various points, well in advance of the Government conference in Washington to adopt ways and means for relief. This is not the first time the South has been able to offer assistance to the West. Carloads of corn were sent from Georgia to the Dakotas when that district had a crop failure some 20 years ago.

Under date of August 11, the James D. Lacey Company, timberland factors, Jacksonville, Fla., wired to United States Senator Duncan U. Fletcher, of that State:

"As forest managers for several tracts, totaling 350,000 acres second-growth timberlands in south Georgia and north Florida, we offer free grazing for one year for 20,000 head of cattle from drought-stricken areas. All land is tick-free. Plenty of good water. Forage improved under fire protection. A small part now being grazed. Cattle can be segregated without trouble."

The offer was transmitted to the Secretary of Agriculture by Senator Fletcher, with strong recommendation for favorable consideration.

At the same time, thousands of acres in fine pasture land in South Carolina were thrown open to the cattle raisers of all the great West, and also the farmers of Spalding County, Georgia,

of which Griffin is the county seat, planned to arrange for imports of dry-country stock for the remainder of the summer and throughout the winter.

Provision for easy movement of livestock from drought areas to the South was made by the railroads through substantial freight reductions in some cases, and preparations for similar reductions as necessity might demand.

The South is in a most fortunate position, not only through better crops produced this year, but due to the fact that because of its longer growing season it can produce winter pasturage which will be sorely needed after the prolonged drought. Boarding refugee cattle in the South from farther north drought areas opens up additional revenue for the Southern farmer. Not only that, but Southern crops in many sections are good, including corn. North Carolina reports good crops and plenty of milk, butter and eggs, as well as late summer fruits and vegetables. The State also expects to have a larger tobacco crop this year than in 1929. Georgia's peach crop has brought nearly \$7,000,000 to the State and it had the largest watermelon yield in its history. Florida's citrus fruit prospects are good, the crop running over 20,000,000, with an average price of \$3.00 a box, and present indications are that Florida is now in

a better position and condition than for many seasons past.

According to a map based recently on reports to the United States weather bureau, North Carolina, South Carolina, Georgia and Florida had received "ample rains" virtually throughout; Alabama enjoyed "ample rains" in half the State and "light rains" the other half, while Mississippi, Louisiana and Texas each showed half "very dry" and half "light rains" in their respective areas.

Of the remainder of the country, all was "very dry," except New England, Minnesota and Wisconsin, with "light rains" also in small parts of Oklahoma, Arkansas, South Dakota and Nebraska.

Completing \$6,000,000 Hotel

St. Louis, Mo.—The new 28-story apartment hotel under construction at Maryland avenue and Kingshighway boulevard for the Park Plaza Apartment Hotel Co., at a cost of approximately \$6,000,000, is nearing completion and is expected to be ready for occupancy by October 1. The building is 216 by 200 feet, of brick, steel, stone and concrete construction. Edwin J. Bauman and Laurence O. Schopp are the architects and Brussel & Viterbo, consulting engineers, all of St. Louis. General construction is being handled by Sam Koplar and Nat Koplar, president and vice-president, respectively, of the Koplar and Park Plaza companies.

Good Industrial Illumination Makes for Greater Safety

Improves Morale of Labor and Increases Production Efficiency—
Expenditures for Better Lighting Facilities Sound Investment



By
D. W. ATWATER,
Westinghouse Lamp Co.,
Bloomfield, N. J.

Westinghouse Lamp Machine Shop

Provided with 10 foot-candles of well distributed illumination from 150-watt white bowl lamps in RLM standard dome reflectors 10 feet above the floor on 10-foot centers, eliminating the use of local units for medium grade work.

AMERICAN industry has achieved a high degree of production efficiency through the elimination of needless manufacturing operations. How were the workmen—those who form the soul of production—affected during this advance to greater efficiency? Were they required to increase their capacity without improved working conditions?

Apparently they were not given every improved facility at work, for today the annual loss of men due to industrial accidents reaches an appalling total of 100,000. Is this an indication that laboring men have not had sufficient consideration? Was the improvement limited to machinery at the cost of human safety?

There is little doubt that employees deserve the best possible working conditions if they are to carry out modern production schedules. Still, many industries continue to operate with poor lighting conditions. If it is difficult for workers to see distinctly their health is impaired, accidents occur and the general morale is lowered.

Insurance companies carrying industrial group accounts realize this condition and are endeavoring to make improvements. One such company estimates, after thorough investigation, that accidents annually cost the United States \$12,000,000,000. Two billion of this amount is paid by them for compensation claims, medical fees, and hos-

pital charges. The remaining ten billion dollars, paid by manufacturers for uninsurable or indirect costs, are termed the "hidden costs" of industrial accidents. The chart shown in Fig. 1 illustrates the fact that only one-fifth of every dollar paid for accidents is borne by insurance companies.

Insufficient and improper lighting is probably a contributing cause for every industrial accident. Fifteen per cent of all accidents, according to the Committee on Light and Safety of the Illuminating Engineering Society, are directly due to defective illumination, which represents an economic loss of almost two

billion dollars every year to the manufacturers of this country.

Industry has already made some progress towards better illumination, and with most gratifying results. In addition to reducing accident hazards, manufacturers who have revamped their lighting systems have been rewarded with increased production. As much as a 25 per cent increase has been recorded at an expenditure for the change averaging only 2 per cent of the payroll. Other advantages were better morale, lower labor turnover, and less spoilage. Facts show, however, that this movement has only begun.

According to the chart, Fig. 2, the decrease in the foot-candle intensity of daylight during the winter months is accompanied by an increase in the number of accidents. In December when the hours of daylight are fewer than any other month in the year, accidents are 100 per cent more than in summer. As industry provides better lighting systems of uniform, adequate intensity, accidents during the winter months will decrease.

No matter how good the daylight illumination, it is not sufficient for the safety of workers who keep the wheels of industry in motion. Intensity of light outdoors averages from 5000 to 6000 foot-candles, drops to 100 just inside the window, and falls to 1 and 2 foot-candles in the center of the build-

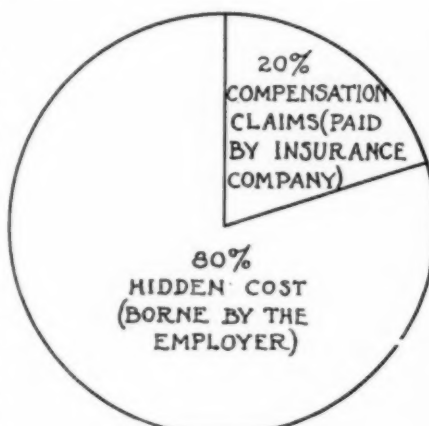


Figure 1

Hidden cost of industrial accidents

ing. When we realize that 8 to 10 foot-candles is the minimum intensity necessary for many industrial operations and that an intensity well over 20 foot-candles is often provided, it is apparent that daylight illumination alone is too feeble. Even in the summer months when daylight intensity outdoors reaches 9000 and 10,000 foot-candles, there is not sufficient light in the center of a factory room. This excludes the fact that manufacturing equipment and machinery often obstruct daylight filtration. As further proof that daylight illumination is not ample for greater safety, let us realize that December averages only five hours of sunlight and that throughout the year there are, on an average, 142 cloudy days.

Some legislatures have passed laws regarding industrial lighting. Mandatory levels of illumination are specified similar to those existing in Pennsylvania, which read:

"Lamps producing glare shall be provided with reflectors"

"Avoid shadows and excessively sharp contrasts"

Ten states—California, Massachusetts, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Washington, and Wisconsin—have laws of this character which include provisions for minimum intensities necessary to insure reasonable safety. It should be understood, however, that the intensity required by these codes is not high enough for greater safety and increased production.

Poor lighting is a result of glare, low intensity, and improper distribution. All three of these conditions impair the

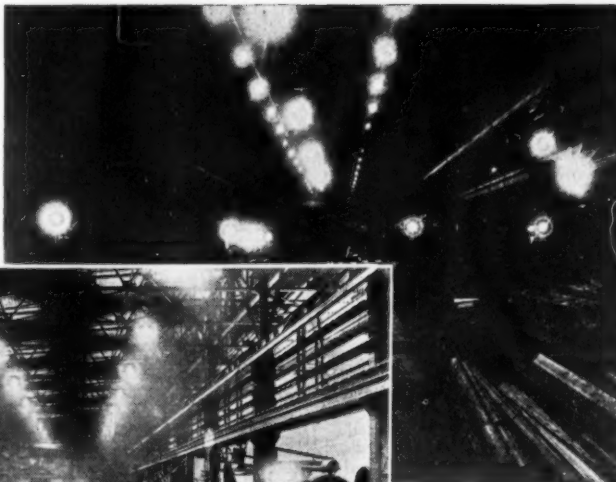
eyesight and make it difficult for workmen to see distinctly.

Illustrations of before and after lighting under actual conditions in the factory are shown here. They clearly illustrate how workmen are exposed to accidents in poorly lighted factories. Stepping into a darkened theatre on a sunny afternoon one is momentarily blinded just as is a workman who glances from a glaring lamp to his work.

Assembly shop
of Hay Foundry
& Iron Works,
Newark, N. J.



Same shop illuminated to intensity of 5 foot-candles from 750-watt lamps in high bay prismatic reflectors mounted 25 feet above floor on 25-foot centers.



Original lighting installation in Williamson Wire Novelty Co. shop at Newark, N. J., using 50-watt bare lamps, giving an intensity of 1.5 foot-candles.



Same illumination using 75-watt inside frosted lamps in RLM dome reflectors hung four feet above bench on 8-foot centers, giving an intensity of 15 foot-candles.



The human eye is similar to the ordinary camera both in structure and operation. Daylight illumination must be very good to photograph scenes at a shutter speed of 1/50 or 1/100 of a second, and in the factory there must be good illumination if the eye is to function quickly and accurately. Just as a time exposure is necessary to photograph on a cloudy day so does the eye require time to see in a dark room. Danger increases with moving machinery, for a revolving wheel under poor lighting conditions appears to be moving faster. What happens if the worker misjudges because of his illusion?

Conditions of glare prevail where the lamp is not protected by a reflector, or where the lamp and reflector are out of proportion in size and the lamp protrudes below the reflector. In such cases, a worker glancing at the source of light is momentarily blinded. This condition can be eliminated by specifying lamps and reflectors of correct size.

Another cause of poor lighting is low intensity. This results from using lamps of insufficient wattage. In many instances 100 watt lamps are installed where a size of 200 watt should be used. Sometimes lamps of correct wattage fail to give sufficient intensity because there are no reflectors to control the light. Too much of the useful light is thus wasted on walls and ceilings. Reflectors on the other hand confine this light to working areas.

Expert Advice Urged on Installations

Lighting installations should be planned under the supervision of ex-

perts. This is a solution to problems of faulty distribution, the cause of light and dark areas and shadows. Correct spacing of outlets will sometimes permit fewer lamps of higher wattage to give correct illumination thus insuring more economy. Older installations have outlets placed here and there wherever needed, but good practice today has these outlets in specific locations to give an even distribution of light over the working area. This method of eliminating shadows is a helpful factor of industry safety. Every factory must have some light, and while doing the job why not make it a good one with a complete installation of proper illumination?

In one manufacturing concern employing an average of 1000 workers, the annual number of accidents (many of them minor, none of them fatal) was approximately 425. Revamping the lighting reduced this figure to an average of 170. The cost of current was increased almost \$3000 per year but the "hidden cost" accident bill was reduced more than \$35,000 per year. In addition, a good safety record must have had a favorable influence on insurance premiums.

One distinct and tangible advantage of better lighting is the resultant increase in production. Labor efficiency increases and spoilage decreases. As the worker is free from fatigue caused by poor light and shadows, his capacity continues at a steady rate, and, with improved quality, he boosts the production figure.

Expenditures for Better Lighting Facilities Prove Good Investments

Some manufacturers which have benefited from the installation of better lighting are the Timken Roller Bearing Co., which increased production 12½ per cent, an amount equal to a financial

return five times the cost necessary for the change; the Detroit Piston Ring Co., which increased production 25 per cent at a cost of 2 per cent of the payroll; the Dover Manufacturing Co., Dover, Ohio, which increased production 12.2 per cent at a cost of 2½ per cent of its payroll.

Typical examples of foot-candle intensity before and after the installation of an improved lighting system are shown in the following table with resulting increases in production:

Industry	Foot-Candle Intensity		Resulting Increase
	Old System	New Production System	
Metal Bearing	4.0	12.7	15%
Steel Machinery	3.0	11.5	30%
Carburetor Assembly ..	2.1	12.3	12%
Piston Ring	1.2	18.0	25%
Roller Bearing	5.0	20.0	12%

Even with the best lighting system accidents will occur and production will drop off without proper maintenance.

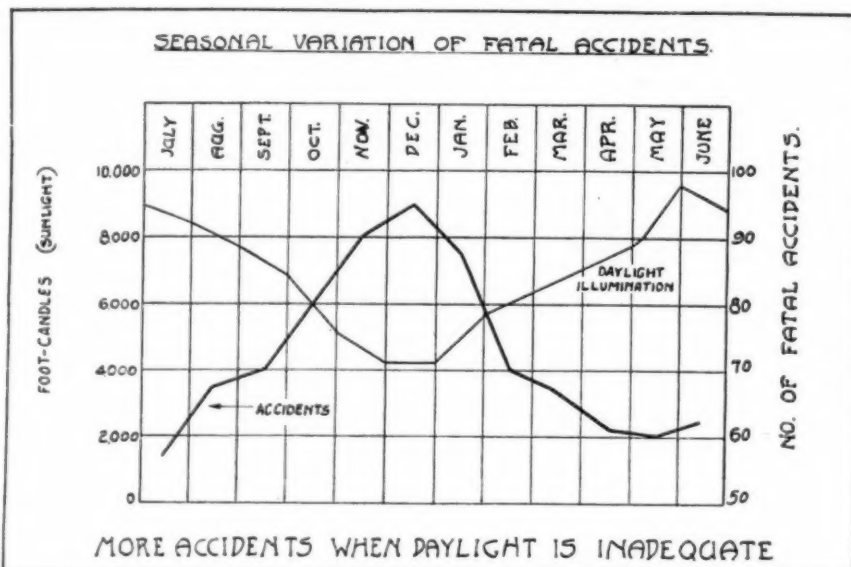


Figure 2
Chart prepared by Illuminating Engineering Bureau of Westinghouse Companies

Dust and dirt readily collect on lamps and reflectors, and if a careful check is not made at regular intervals, the room intensity will slowly decrease to a degree dangerous to the safety of labor. Good maintenance is obtained by testing the foot-candle illumination at various locations in the factory to determine whether or not the fixtures need cleaning or the lamps replacing.

In conclusion, manufacturers owe it to themselves, their employees, and their employees' families to provide a high degree of safety in their factories. Even the benefits of a group insurance are often too meager to forestall poverty and hardship in a large family. When good illumination will better the life of labor and at the same time show financial results to the manufacturer he has no excuse for permitting the existence of poor lighting.

NEW TEXAS GAS LINE PROJECTED

United Gas Company to Build from Refugio Field to Pettus

Beeville, Tex.—Heavy shipments of pipe have been received here and construction crews are concentrating for work on an 18-inch trunk gas pipeline from the Refugio County field to the Bee County fields and thence north and west to connect with other trunk lines into San Antonio. The project has been undertaken by the United Gas Co., Houston, B. M. Nowery, general superintendent, and the route will extend from Refugio northwest to the Pettus field in Bee County, traversing the Ray oil and gas properties east of the main

production. From there it will run north of Pettus, a 16-inch extension to connect with the Moody-Seagraves gas line, which extends south from San Antonio to a point between Runge and Kenedy. Another extension will run west from Pettus to connect with the north and south trunk line of the Magnolia company.

Bids on \$450,000 Postoffice

El Dorado, Ark.—Bids will be opened August 28 in the office of Jas. A. Wetmore, Acting Supervising Architect of the Treasury Department, Washington, for construction of a \$450,000 postoffice building here, 148 by 90 feet, 3 stories and basement. Estimates will be received later for elevators.

\$596,000 Contracts on School

St. Joseph, Mo.—Contracts exceeding \$596,000 have been awarded by the School Board for erecting the new senior high school building here, general contract being awarded the Lehr Construction Co., St. Joseph, at \$437,448. Plumbing, heating and ventilating contract was awarded the Industrial Heating & Plumbing Co., at \$125,540, and contract for electrical work was awarded the Karrasch-Donly Electric Co., at \$33,279, both local firms. The building will be 3 stories and basement, 258 by 249 feet. Eckel & Aldrich, St. Joseph, are the architects; William B. Ittner, Inc., St. Louis, supervising architect, and Walter E. Gillham, Kansas City, Mo., consulting engineer.

Is the American Farmer Doomed?

By

STANLEY F. MORSE,

Morse Agricultural Service,
New York and Dalzell, S. C.

MORE apparent every day becomes the fact that the present conception of our agricultural problem must undergo a radical change. President Roosevelt's Country Life Commission believed that the tendency of the rural population to move to the cities was a national calamity. Politicians loudly proclaim that the farmer must be given a square deal. And the United States Department of Agriculture and most of the state agricultural colleges are making mighty efforts to keep the average farmer on the land.

What is the Farmer's Function?

"Since the settlement of the Colonies and throughout the history of our great Republic most of our statesmen and business leaders have come from the farm. We must maintain the American farm to produce the able men and women on whom the progress of our country depends." Thus declaim our political leaders. That the American farmer, "the basis of national prosperity," must be continued in existence to produce cheap food and clothing for his highly paid city brethren and to breed large families to swell the urban population seems to be the central theme about which "farm relief" has been built.

But why should the farmer continue to produce cheap food and clothing for the rest of the country if this production is at a loss to the farmer? And if the nation wants the farm to be a breeding centre for a more virile population, why should not the urbanites furnish the necessary financial support to these rural breeding establishments?

Economic Laws Must Govern

One thing is certain: No individual or company can continue to manufacture a product at a loss and stay in business. This is a day of close business competition and the industry or business which cannot operate economically enough to make a good profit is soon eliminated by bankruptcy. Is there any reason why agriculture, itself a great industry, should expect to be exempt from this inexorable economic law? If, under present operating and market conditions, it is possible for certain farmers to produce at a profit while others incur a loss, why is it necessary to attempt artificially to raise prices or otherwise assist the unsuccessful farmers?

The fact that the tariff has helped establish certain industries and that federal and state legislation has aided the labor unions to get more money for

This country has no carefully thought-out agricultural plan. If a national agricultural program had been developed, perhaps some of the present depression in agriculture could have been foreseen and avoided. If some of the Southern states and their respective counties should undertake development surveys and definite programs—both agricultural and industrial, for the movements are interdependent—it should be possible materially to hasten their development and prosperity. One way to help reduce the tax burden of the people is to help to increase their income.

less work does not prove that governmental assistance will be the best thing for agriculture in the long run. However, it would be only fair to our farmers at least to give them as favorable laws and tariff rates as other industries and workers enjoy. To try to sustain the prices of agricultural products by loans, bounties or other devices will stimulate greater overproduction, which in turn will result in lower prices.

Are Prices of Farm Products Too Low?

It is said that the prices of farm products are too low. But are they? Wheat is about 90 cents per bushel, at the time this is written. The 1928 Yearbook of Agriculture gives the cost of wheat production by states for 1927, the figures varying from 82 cents per bushel in Wyoming to \$2.47 in Tennessee. An article on page 5 of Agricultural Engineering, February, 1930, tells how wheat is produced on large "industrialized" farms for 40 to 50 cents. The efficient farmer should be able to make a net profit of 25 to 50 cents a bushel.

Cotton is now worth about 13 cents a pound. Costs vary from around 8 cents in Texas and Oklahoma to 12 to 20 cents in the Southeast. Cotton raising contests in South Carolina and Georgia have shown that even in this region cotton can be produced for around 10 cents a pound. Corn at 85 cents a bushel can be produced for 35

to 50 cents. Here again the good farmer or the farmer operating under favorable conditions can make an excellent net profit, even with low prices.

Moderate Prices Check Over-Production

It is clear that some farmers can raise their products at a cost which will yield them a good profit even when prices are said to be low. On the other hand, the production costs of the majority of farmers are close to the current commodity prices or higher. So if the non-profit-making, high-cost producers of farm products were eliminated, the profit-making operators would be left. This would automatically reduce production and tend to prevent over-production. In other words, so far as the policy of the farmers' co-operatives and the Federal Farm Board is concerned, it would be better to hope to stabilize prices at moderate levels rather than at high levels which will permit the inefficient "marginal" farmers to make a small profit. The Government might as well try to maintain in business the small manufacturer and the small merchant as to undertake to "relieve" the money-losing farmer. The present governmental policy is dictated not by economic necessity but by political expediency.

National Agriculture Program Needed

Would it not work a severe hardship on many farmers if no "farm relief" were forthcoming to sustain high prices? In the long run, it would not, because many persons now attempting to farm and unadapted to it would be better off in some other work. And then there are many other practical forms of "farm relief" which sooner or later will put on their feet many farmers whose present outlook is most discouraging. While some of these methods are being advocated by federal and state agencies, it is a curious fact that no detailed, carefully worked out, practicable state or nationwide agricultural programs have been developed. We have some of the details, but not a complete working plan. The preparation of such a national agricultural program might well be undertaken by the Farm Board in cooperation with the Department of Agriculture. Such a plan would attempt to visualize and coordinate the relationships of all our agricultural sub-industries to each other, to the domestic and foreign markets to

be served and to the economic structure of the United States. A National Agricultural Program would prevent the over-development of any one component (such as cooperative marketing or scientific research) in such a way as to throw the whole plan out of balance. It would prevent the Government from "going off half-cocked." At first glance, the conception of such a program seems so huge and complex as to appear quite impractical, but a problem so tremendous as that of agriculture requires a solution in kind.

New Farming Methods

Some details of such an agricultural program may be mentioned here briefly. Industry pulled itself out of the post-war slump by adopting certain methods which agriculture has failed to utilize to a sufficient degree. These include: (a) Reducing production costs; (b) more efficient management; (c) up-to-date marketing methods. All these are being gradually put into practice, but progress is slow because of the unwieldy character of agriculture with its millions of producing units—farmers of varying intelligence and ability. If agricultural production were in the hands of various well-managed corporations and cooperative groups, improvement could be secured much more rapidly. With this thought in mind, the following suggestions are made.

Farmers Must Improve or Quit

It seems probable that economic necessity in the near future will result in some important changes in the status of our farmers. Extensive investigations made by the bureau of agricultural economics of the United States Department of Agriculture and the state agricultural colleges have found generally that the larger farm units usually produce more economically and are more profitable than the small units, except in certain very intensive types of farming. Not only can the larger farms buy and sell to better advantage, but also they are able to pay for better management, can obtain financing more easily, can reduce costs by the use of power and labor-saving machinery and in various ways can secure the same economies as can large industrial enterprises. If this is true, our individual farmers will either have to go out of business or develop along the following lines:

1. The self-sustaining farmer, who is able to produce most of the food he needs, will produce and sell as best he can his surplus of certain products. His economical mode of living will enable him largely to finance his own operations, but he will not be an important producing factor. This type of

farmer will be able to exist only under certain favorable conditions and is apt to be eliminated by high land values and high taxes.

2. Competent farmers, located near favorable markets, who are efficient producers, shrewd traders and good salesmen and collectors, will be hustling men, well above the average and will supply mainly local markets.

3. Efficient farmers, operating farms large enough to yield an adequate income, will be real business farmers, doing much of their work with improved machinery, holding down their production costs and buying and selling through cooperative organizations. By means of strong, well-managed cooperative buying and marketing associations, the individual may obtain virtually the same advantages as accrue to a large-scale farming company. And owners may now turn over the management or supervision of their farms to competent agricultural service organizations.

4. Members of cooperative farming associations: This is a glimpse into the future, perhaps nearer than we think. In order to secure the benefits of large scale farming operations, groups of farmers in certain localities will organize *cooperative farming associations*, which will employ high-class management and conduct their farming operations under its direction. A step toward cooperative farming has already been taken in Illinois where three groups of farmers, with 640 members, employ farm cost accountants to keep their members' books. Other groups of farmers will organize farming corporations which will take title to their lands and issue stock in payment therefor. Thus, each individual farmer will become a stockholder in the company of which he will also be an employee in charge of his farm. The owners of a number of cranberry bogs in Massachusetts have already followed this plan in taking stock in a large operating company, in exchange for their lands.

Competent Management Essential

5. Employees or operators for large farming corporations: Contrary to the general notion, the operation of farming enterprises by corporations is nothing new. This has been going on in the West and South and in the tropics for many years and has proved so profitable in various instances that the stocks of these companies are listed on some of the stock exchanges. The greatest difficulty has been to find competent managers for large-scale farming enterprises. The fact that so few big farming projects exist has not provided an opportunity for any large number of men to secure the practical experience

essential for big farm management. The small or moderate sized farm cannot afford to pay a salary which would attract to managership men of the highest calibre. Consequently, many of the most capable agricultural college graduates have gone into teaching, research, extension and other technical lines that pay a better compensation than farming or farm management. One beneficial result of the operation of large tracts of farm lands by corporations would be the incentive to men of brains and ability to train themselves for executive positions with these companies. Perhaps the principal reason why the great industrial corporations have made such progress in that they have offered to young men an opportunity to gain fame and fortune as executives and technical experts. And until we get the same class of brains into farming, agriculture will lag behind other industries.

Farmers Will Prosper Under Corporation Farming

It is not necessary to explain further in detail how a well-managed farming corporation can reduce production costs or how it can take over large areas of lands now held by banks, insurance companies and others and by proper financing and management make them pay. Suffice to state that large-scale farming will not, as many fondly believe, make a peasantry of our present farmers. On the contrary, it will give our best farmers a chance to make larger and more dependable incomes than ever before.

Many skilled employees will be needed, such as managers, accountants, department or sub-farm superintendents or foremen, overseers, dairymen, herdsmen, tractor foremen and operators, mechanics, carpenters, blacksmiths, plowmen, cattle and sheep herders, packing house foremen, warehouse keepers, irrigators, engineers, research directors, technical specialists, chemists, biologists, veterinaries, and so on. The big companies will need large staffs of well-trained men.

Tenants will be used on many of these great farms, ranches or plantations. Today, many of the most successful farmers are working as tenants on land owned by somebody else, and are finding it very profitable. Thus, in Cuba, most of the sugar cane is produced by "colonos" (tenants), many of whom farm large areas, and in the Middle West, thousands of acres are tilled by prosperous tenant farmers. A tenant system also prevails in the South, but there most of the tenant farms are small and the tenants not first-class farmers. Tenantry under favorable conditions offers an excellent

opportunity to the good farmer who lacks adequate capital.

Some of the farming companies with large tracts of land will sell scientifically laid-out farms to selected farmers for a nominal initial payment, and give them a long time to pay for their farms. But while obligated to the company, these farmers would have to work under its supervision to insure their own success.

Believing that, as a result of the "sur-

vival of the fittest" of our farmers and the placing of farming on a business basis, overproduction will be reduced and any surplus will be manufactured into various profitable by-products, we must also logically believe that the opening of new lands by reclamation projects or the colonization of lands with foreigners is uneconomic and harmful to our agriculture. Cooperation and corporation farming will be potent aids to the solution of our farm problem.

More Efficient Machines Aiding New Chemical Developments

Use of High Pressures Reveals That Chemical Science Is at Threshold of Discoveries of Great Importance

A NEW field of vast possibilities for the world's industry and agriculture is being uncovered by developments in the use of high pressures, states the American Chemical Society in announcing a symposium to be addressed by leading research workers in connection with the society's eightieth meeting in Cincinnati, September 9.

Scientific investigation now going on in laboratories of the Standard Oil Company, in Federal bureaus, the Massachusetts Institute of Technology, the University of Illinois, University of Wisconsin and other institutions will be reported in papers that will reveal chemical science at the threshold of discoveries promising fresh reservoirs of supplies for human needs.

Discovery of the value of these pressures is believed to mark the foremost advance achieved in applied chemistry in the last 20 years, according to Prof. Norman W. Krase of the University of Illinois. Hydrogenation of petroleum, production of synthetic nitrates, and manufacture of methanol from water gas are merely the starting point of a revolutionary advance in which nature's processes will be outstripped, it is declared. Professor Krase said:

"In the hydrogenation of petroleum, the use of pressures has already revolutionized manufacturing processes. A hundred per cent utilization of raw materials of whatever grade, is made possible. As a result, availability of the world's petroleum supplies is increased nearly one-third.

"Synthetic ammonia, which 'fixes' the nitrogen of the air, is making agriculture of the United States independent of nitrate deposits of South America. Synthesis of higher alcohols from water gas has disclosed additional sources of enrichment.

"A pressure of a little less than seven

tons is employed in the new synthetic ammonia process. Two and a quarter tons are required in the hydrogenation of petroleum and the production of methanol, or synthetic wood alcohol. These pressures are combined with temperatures ranging from 450 to 600 degrees Centigrade.

"The use of pressures for solution of important commercial problems has so far involved a simpler application of the theory. Materials which formerly would not react become tractable under compression and high temperature. We are now arriving at problems of equipment, for special metals and alloys are required to withstand the stress of the new processes. Chromium nickel steels and some other similar products have been found.

"An outstanding feature of the program will deal with the hydrogenation of petroleum. This report will be made by Dr. R. T. Haslam of New York and will cover researches he made with R. P. Russell for the Standard Oil Development Company. Laboratories of this company have contributed largely to the commercial application of pressure in the oil industry and have made available to the country many improvements in gasoline manufacture.

"Another feature will be a report from the research laboratory of the Massachusetts Institute of Technology. Dr. P. K. Frolieh and D. S. Cryder will present their findings in the synthesis of new organic compounds from such relatively cheap and plentiful materials as water gas.

"Developments such as the production of anhydrous ammonia from atmospheric hydrogen and water gas, and synthetic wood alcohol from water gas will be discussed by Dr. D. F. Smith of the A. O. Smith Corporation, Milwaukee, and L. L. Hirst of the United States Bureau of Mines; Dr. P. H. Emmett of the Fixed Nitrogen Research Laboratory, Washington; Dr. B. F. Dodge of Yale University and W. F. Hamilton and W. O. Hebler of the Charles Englehard Company, New York."

\$2,500,000 San Antonio Bank Building

The new \$2,500,000 building recently completed in San Antonio, Tex., for the Alamo National Bank ranks as one of the outstanding structures of the city. It is 22 stories and basement, of steel,



New Home of Alamo National Bank

stone, reinforced concrete and brick construction, fronting 142 feet on South St. Mary's street and 136 feet on West Commerce and West Market streets. The banking room, finished in marble and bronze, has a ceiling 40 feet high. The basement accommodates bank vaults and conference rooms, which are reached by two elevators and a stairway. Six elevators service the offices above. Graham, Anderson, Probst & White, Chicago, were the architects and the McKenzle Construction Company, San Antonio, general contractor. E. A. Strauss & Son, Chicago, were the vault engineers.

Public Utilities Earnings Increase

Gross earnings of public utility enterprises in June, exclusive of telephone and telegraph companies, show an increase to \$189,000,000 from \$183,000,000 in June, a year ago. The figures are compiled by the Department of Commerce on reports by 95 companies or systems operating gas, electric light, heat, power, traction and water services, gross earnings being defined as, in general, gross operating revenues. The gross earnings for the first six months of this year were \$1,191,500,000, as compared with \$1,154,750,000 in the same period last year.

A Financial Program for Florida

By

GUY M. WALKER,
New York City.

THE first thing to be established in any composition of debt or any arrangement between a debtor and his creditors is the good faith of the debtor, and so Florida must in the first instance affirm the purpose and intention of every municipality to keep and perform its obligations, and to pay its debts in perfect good faith. Of course, a situation like the present in that State naturally produces antagonism on the part of taxpayers toward bondholders who, they feel, are oppressing or at least threatening to oppress them. It is natural for a taxpayer to withhold his payments when he does not see how he is going to be protected even if he does pay.

The chief asset of the taxpayer—his real estate—is utterly unsalable under present conditions, because of the uncertainty and because of the accumulation not only of ordinary taxes, but also of special assessments for improvements.

The first thing is to map out a plan that will assure the taxpayer an equitable consideration upon his payment of delinquent taxes. If the taxpayer is two or three years in default, the payment of one year's taxes should secure for him at least an extension of nine or ten months before he is threatened with sale and loss of his property; and the payment of each additional instalment within that nine or ten months period should secure such an additional equitable extension. The point is that one must provide by law for an arrangement that will start the taxpayer again paying taxes, with an assurance that one payment will save the immediate loss of the property by tax sale, even though he is not able to pay all. There is no question that, when the taxpayers feel that a plan has been adopted whereby they will secure equitable protection, they will again assume the burden of paying taxes and special assessments on their property. This, too, will again make real estate salable and again start the movement of property toward normal conditions.

But the situation is such that I believe it can be successfully handled only with a plan substantially as follows:

The Legislature of Florida should be called into immediate session and a law be passed creating a special commission for handling the present situation and the collection of taxes for payment of interest on bonded debt, and final amortization of the debt itself. This commission should be called the State Municipal Debt Commission and should be composed of the leading State financial officer, either the Governor or the State Treasurer; a banker representing the leading banking houses that handled the sale and distribution of

these municipal bonds; and a third member, an independent financial expert, to act as chairman and weigh the equitable balance between the taxpayer, represented by the State Treasurer or Governor, and the claims of the bondholders, represented by the investment banker.

Now the floating of these issues was in most cases done at a time when interest rates were higher than they are today, and in many cases the bond dealers imposed really onerous rates of interest on the municipalities as the price of raising money for their improvements. In addition, feeling that the issues themselves were more or less hazardous, they imposed on the cities a short term and serial maturity which they knew would be impossible of carrying out. If they did not know, they ought to have known. In many cases, the bonds were payable within 10 years, a practically unheard of term in the case of sizeable cities and towns. The result of these unfair and onerous conditions has been to precipitate defaults and destroy the values of the bonds. This has hazarded the investment of the bond buyer and, by destroying the credit of the municipality, has prevented it from going ahead with its improvements and developing the power to pay off the issue. Consequently, this debt commission should be given authority to refund or extend all short-term bonds into bonds payable in not less than 25 years, and preferably in 40 or 50 years.

In most instances, the high interest rates which were imposed should be reduced to not more than 5 per cent, and in some cases as low as 4 and $4\frac{1}{2}$. The new refunded bonds bearing these reduced rates of interest will be worth more under present conditions than were the old bonds bearing 6 and in some instances even higher rates of interest. Such refunding will not be hard to bring about, if the matter is in the hands of a commission that inspires confidence.

The prime need of such a commission in undertaking to cure the present situation is funds, and these must be provided chiefly from entirely new sources. A large amount of the defaulted bonds are bonds that have been issued for improvement of roads and streets. In many cases, these were covered by special assessments against abutting property, but the value of that property is now problematical. The natural and sensible thing is to transfer the burden of that debt from abutting property to

those who use the roads and streets. There already is a gasoline tax, but this should be increased at least one cent a gallon, and there should be an additional license tax based on the weight of the car or truck and horsepower of the engine. In addition, there should be a sales tax 1 or 2 per cent on all tobacco products, cigars, cigarettes, smoking and chewing tobacco. Also, it might be well to add a still higher sales tax, say 5 per cent, on automobile tires, which have been so greatly benefited and saved by the good roads and paved streets. All of these funds should be placed at disposal of the commission and it should have the power out of this fund to buy defaulted coupons and make arrangements for purchase of coupons as they come due in the future, holding the coupons as one of the commission's assets to be collected from the municipalities when the taxpayer again resumes his burden, as he will when he sees the way open for the future.

There is a feeling that property assessments throughout the State are not altogether equal and equitable and, for the purpose of making this burden of taxation fair, the debt commission should be authorized to equalize assessments and valuations all through the State. The debt commission should also be given full authority to collect all taxes from all sources that are chargeable with the interest and principal of the municipal debt, because there is a feeling that local authorities have exercised a great deal of favoritism in enforcing collection against some and not against others. Impartial collection of taxes is one of the first things necessary to restore the will to pay among the taxpayers.

Another condition that should be ameliorated is the double taxation of properties within the cities and towns. In nearly every instance where there is a considerable city in any county, the county government imposes county taxes on city property, which amounts to double taxation on all property in the city. The law authorizing a debt commission should especially authorize and require it to equalize values within city limits and outside of city limits, and should provide for the payment of a single tax in all instances, so that the city taxpayer will pay only a single tax as the county taxpayer now pays. A small percentage of this city tax should be allotted to the county officials for county expenses. But to impose on city property owners county taxes for the support of schools and roads of the county is outrageous, when they already support their own city schools and

streets. A large amount of the default under the present system is due to the fact that city taxpayers must pay twice, and in two different places. They should pay only once and a small percentage of that payment, not over 15 or 20 per cent, should be allotted to the county officials for support of courts, sheriff's office, etc.

The payment of taxes itself should be distributed in instalments throughout the year. About 40 per cent should be paid as the first instalment, and two later instalments, four months apart, of 30 per cent each. This will lighten the payment and make it much easier on the taxpayer, and furthermore will distribute the receipts equally through the year at times that more nearly meet the dates on which interest of sinking fund payments is due, and will prevent accumulation of sums which might be deposited in banks that might fail, as has happened frequently in the past.

I notice it is proposed by the State committee that has been investigating conditions that Florida undertake taxation of intangibles. Such a proposition is not to be thought of. Taxation of intangibles is utterly impracticable and has never been a success. Witness New York State, which has attempted it for upward of 100 years, and where it has resulted only in compromise, with a few big taxpayers, one with \$1,000,000 agreeing to pay taxes if assessed only on \$25,000 of intangibles, or where a certain man of immense wealth agreed to submit to a \$5,000,000 assessment.

Neither should the proposition of imposing an inheritance tax be thought of. An inheritance tax is robbery. It is utterly inequitable and cannot be defended on any ground, moral or expedient. It has been Florida's glory that it has proclaimed this as its attitude and it would rob the State of its moral prestige before the world if it should now abandon its prohibition against taxation of inheritance, and resort to such taxation even temporarily.

It might be well, in order to facilitate the carrying out of such a plan as here proposed, to appeal to Federal courts in the State to appoint the debt commission as receivers for collection of taxes and assessments due from municipalities and counties so they will have the arm of the Federal courts to aid wherever they become subrogated to rights of bondholders through purchase of coupons or bonds themselves, or where by an agreement an existing short-term issue with a high rate of interest is refunded into a long-term issue at a lower rate of interest. This would enable the commission to hold existing bonds as a lien against property in the municipalities and as security for new issues that it gave to old bondholders.

The plan I have here outlined I am

sure is practical and will secure the cooperation of taxpayers, will satisfy bondholders and will restore prosperity to the State of Florida, enabling it to go ahead with its development and, by making Florida real estate again salable, will induce further immigration into the State and make easy the carrying and final payment of these municipal bonds.

Postoffice for Roanoke

Low bid to erect a postoffice and custom house building at Roanoke, Va., has been submitted to Jas. A. Wetmore, Acting Supervising Architect of the Treasury Department, Washington, by Worsham Bros., Knoxville, Tenn., at \$423,294.

Contract for \$1,000,000

Orphanage

Richmond, Va.—General contract to erect a group of 13 buildings at Hollybrook, near this city, for St. Joseph's Academy and Orphan Asylum, has been awarded the John T. Wilson Co., Inc., Richmond. The buildings will occupy a tract of 250 acres and will include 8 dormitories, central chapel, school building, gymnasium and priests' house. They will be of Romanesque architecture, brick and terra cotta construction, with stone trim and tile roofs, to cost about \$1,000,000. Carneal, Johnston & Wright, Richmond, are the architects and the Right Rev. A. J. Brennan, Bishop of the Catholic Diocese of Virginia, is chairman of the building committee.

\$3,500,000 Unit of Richmond Tobacco Plant

Recently completed at a cost of \$3,500,000 for buildings and equipment the new unit of the American Tobacco Company plant at Richmond, Va., increases the cigarette making capacity of the city by 58,000,000 daily. This new branch factory of the company was opened late in the spring, the job representing rapid construction work as the first steel was placed in January. East of the factory is the company's new power plant, its equipment including three 500-horsepower boilers and two 1000 kv-a. turbines.

In addition to the manufacture and packing of cigarettes the factory building houses executive offices, hospital with nurses in attendance, and a cafeteria for employees. With completion of this factory the American Tobacco Company now has in Richmond its largest plant for cigarette manufacture. It is a six-story building, general contract having been awarded for its erection last fall to the Wise Granite & Construction Company, Richmond. J. E. Sirrine & Co., Greenville, S. C., were the engineers. Air conditioning equip-

ment was installed by the Carrier Engineering Co., Newark, N. J., and Lamson conveyors are a feature of the structure. Subcontractors included the following:

Insulation—Virginia Ice Machine Co., Richmond
Special flooring—J. Irving Bear, Richmond
Brick work—Duke, Carter and Page, Richmond
Excavating—K. L. Black & Co., Inc., Richmond
Steel—Richmond Structural Steel Co.
Reinforcing steel—Virginia Steel Co., Richmond
Tile and marble—Richmond Tile and Mosaic Co.
Mastic flooring—Johns-Manville Corporation, Richmond branch
Tiling—Federal Seaboard Terra Cotta Co., New York
Gypsum—Structural Gypsum Corp., Linden, N. J.
Steel sash—William Bayley Co., Springfield, Ohio
Partitions—E. F. Hauserman Co., Cleveland, Ohio, and Virginia Building Materials Co., Richmond
Metal—St. Louis Fire Door Corporation, St. Louis, Mo., and Ellison Bronze Co., Inc., Jamestown, N. Y.
Painting—W. D. Timmons, Richmond
Roofing—N. W. Martin and Brother, Richmond
Maple flooring—Transit Lumber Co., Richmond
Lumber—A. W. Allison & Co., Greenville, S. C.
Elevators—Otis Elevator Co., New York
Plumbing—Carle-Boehling, Richmond



New Building for American Tobacco Co., Richmond, Va.

The Milk Products Industry of Texas

By CURTIS MORRIS, Director Statistical Department, East Texas Chamber of Commerce, Longview, Tex.

TEXAS and its great open spaces were long famous for their cattle that went into the nation's beef supply. In time, Texas cows, for the most part of uncertain breeding yet inclined toward the dairy type, came to give a large aggregate of milk. Texas came to lead the United States in country butter production. But the last decade drew toward its close with little interest or faith in Texas as a dairying state.

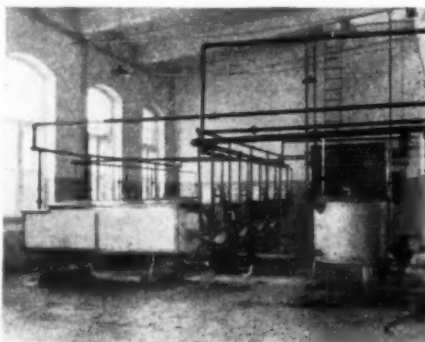
And yet the expansion of dairying and the dairy products industry in Texas in the past 36 months has been aggressive, sound and of sizable proportions. Milk plants, cheese factories and creameries have sprung up. Outside capital has vied with local capital in the development. A supporting dairy cow population is increasing at an encouraging rate. While a great part of this expansion has been enjoyed by East Texas, it has by no means been confined to this area.

Eleven milk plants are now manufacturing sweet cream butter, powdered milk and condensed milk in Texas towns whose economic life only a few months ago was for the most part dependent on cotton. Maximum capacity operation of these milk plants will require approximately 1,150,000 pounds of whole milk a day.

The Texas Milk Products Company, with three modern \$200,000 plants located in east Texas, heads the list of milk plant operators. This company opened its first plant at Marshall in June, 1928. The plant is rated at 100,000 pounds of milk daily and has operated at as high as 45 per cent of capacity. The Tyler plant, opened a year later, is also of 100,000 pounds capacity and is now operating at 15 to

20 per cent of capacity. In June, the third plant was opened at Mt. Pleasant, a town of less than 4000 population. This plant is rated at 115,000 pounds.

In the black lands of Texas, widely known for heavy cotton production, is located the Meadowlake Milk Products Company, at Sherman. This plant, opened early in 1928, was the first of the Texas milk plants and has the further distinction of having been conceived, financed and managed entirely



Meadowlake Milk Products Co.,
Sherman, Tex.

by local efforts. Milk receipts in 1929 were 35 per cent greater than for 1928 and the plant is operating at 50 per cent of capacity, which is 100,000 pounds.

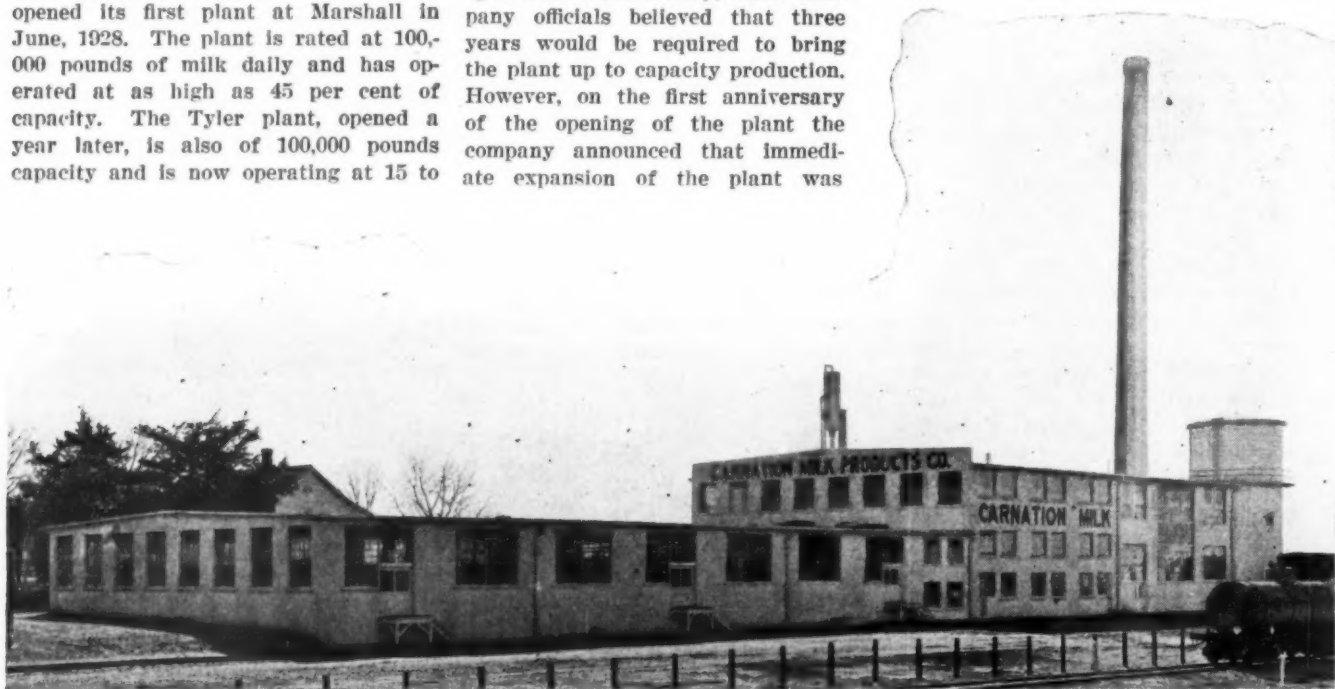
The Borden Company came to Texas. Its plant of 100,000 pounds capacity was opened at Waco in May, 1929. Company officials believed that three years would be required to bring the plant up to capacity production. However, on the first anniversary of the opening of the plant the company announced that immediate expansion of the plant was

being made to care for the growing milk volume. A milk route 85 miles long, said to be the longest in Texas, is one of several supplying the Borden plant.

South Texas can well be proud of having in the Carnation Company plant of 250,000 pounds capacity at Schulenburg, the largest milk plant in Texas. "Contented cows" are supplying the plant with 25,000 pounds of milk daily. Two other milk plants in South Texas are at San Antonio and Seguin, with a combined capacity of 125,000 pounds.

West Texas has three milk plants. During the flush season, a plant of 100,000 pounds capacity is operated at Decatur, at about 50 per cent of capacity. At Wichita Falls, the Southwest Dairy Products Co. is operating a milk plant which is now receiving 30,000 pounds of milk per day. Over near the New Mexico line at Lamesa, local capital has combined with outside capital to build a \$200,000 plant of 100,000 pounds capacity which will be opened this summer. So, on the great plains of West Texas, once the unlimited range of the picturesque old Longhorn, the dairy cow is finding a home.

Cheese factories have helped to expand the Texas dairy products industry. Round Rock is a little town of about 1000 population in a typical cotton growing community. The town's bank often had trouble collecting its loans. Long



Schulenburg Plant of the Carnation Milk Products Company



Plant of the Texas Milk Products Co., Tyler, Tex.

consideration of this problem led the bank to take the initiative in organizing the Round Rock Cheese Factory, which was opened in January, 1928. Daily milk receipts have reached 27,000 pounds, or 70 per cent of capacity. Round Rock cheese has won prizes at the National Dairy Show. Unique packaging in small individual amounts has made it famous. Armour & Company has adopted Round Rock cheese into its family.

Other cheese factories followed the Round Rock example. Buda is a little cotton town of 600 population. Its business men and farmers opened a Buda cheese factory in June, 1928, and milk receipts soon grew to 9000 pounds, or 30 per cent of capacity.

Kraft-Phenix plans to supply its entire Southwestern trade from its new plant at Denison. All of the Kraft-Phenix cheeses and salad dressings will be made in this little city up near the Oklahoma line. Maximum operation of the plant will require 160,000 pounds of whole milk a day.

Eight other cheese factories, with a combined capacity of approximately 75,000 pounds of milk daily, are operating and collectively are potentially important in the future cheese production of Texas. Individually, they are important as a constant stimulus to dairying in the eight widely scattered communities in which they are located.

Creamery establishments, not including milk plants, cheese factories and establishments making only ice cream, number 170, about 40 per cent being in East Texas. A 15 per cent increase in present daily milk receipts over those of a year ago is revealed in reports of 25 East Texas creamery establishments, of which 11 have begun operation within the past 36 months. These figures might be applied to the whole of Texas without serious error.

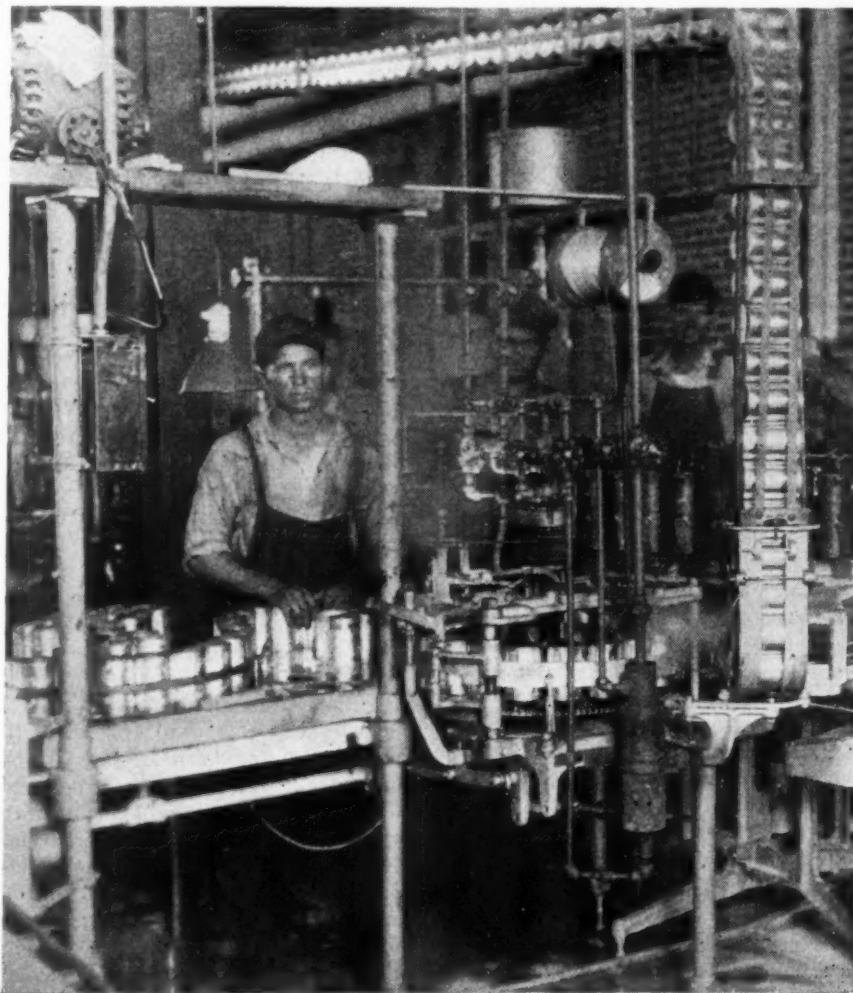
Four combination butter making and poultry packing plants of Swift & Company are now in operation in Texas and the equivalent of 200,000 pounds of milk daily will be needed for capacity operation of each. Company officials report receipts to date as encouraging.

Milk production in Texas as yet is

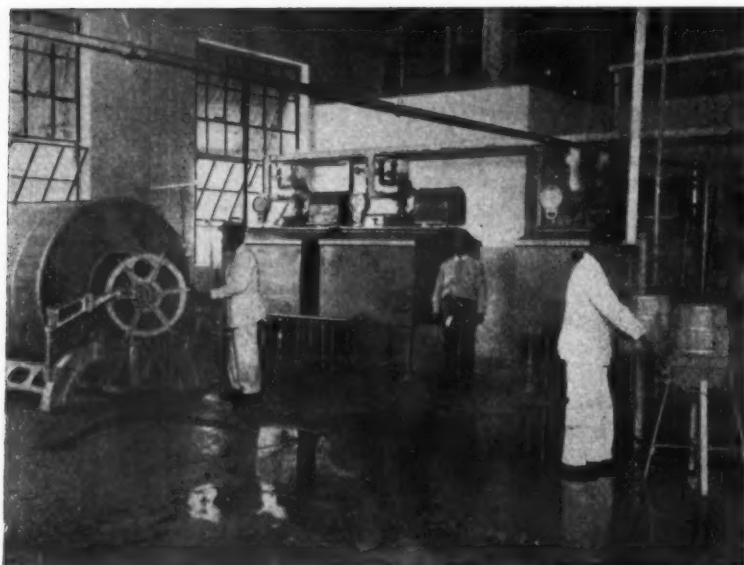
inadequate to meet the demand of the dairy products industry within the State. With the majority of the dairy products establishments, small scale cotton producing communities are being depended upon for milk. Plant managers may chafe a bit because they must operate below capacity, but investors seem well pleased with dairying developments so far and are confident of the future.

Steadily increasing milk receipts are shown by the records of practically every company. The dairy cow population in Texas has increased 4 per cent in the past 36 months. A 54 per cent increase in the number of Jersey registrations in Texas is reported by the American Jersey Cattle Club from March 1, 1927, to March 1, 1930. Fourteen per cent of all Jersey registrations in the United States for the last fiscal year were in Texas, the stock being approximately 95 per cent Jersey.

Dairy development is a major project of probably 200 of the 250 active chambers of commerce in Texas. Their activities include dairy finance corporations, bull circles, milk routes, pasture contests and dairy shows. The East



Canning Room in Waco Plant of the Borden Company



Interior of Texas Milk Products Plant at Marshall, Tex.

Texas Chamber of Commerce sponsors the East Texas Dairy Show and employs a staff member who devotes the greater part of his time to dairy development work.

Texas farmers have become convinced that any one crop system of farming

may prove a type of vicious despotism. They are willing to counsel and work with Texas business men in the promotion of dairying and the dairy products industry which together constitute one of the great hopes of Texas agricultural business.

\$125,000,000 INVESTED IN MINIATURE GOLF

**New Uses for Cotton Seen in Country—
wide Spread of New Sport which has
Given Employment to Thousands in
More Than a Dozen Trades**

Cotton duck or canvas enclosures as one means of fostering the all-year outdoor use of miniature golf courses is the latest suggestion offered in connection with studies for new uses of cotton as carried on by the Textile Division of the Department of Commerce.

Enthusiasm for the sport of "wee links" has grown rapidly within the short period of two years, according to J. L. Lockwood of the Commerce Department Textile Division who has been conducting the preliminary survey of this business and possibilities it offers for more extended use of cotton. Starting with one or two courses in 1928, the number of these "pony" golf courses has risen to more than 25,000, with a value of over \$125,000,000, according to estimates from leaders and observers of the new enterprise.

Development of this new sport and the reception accorded it by the American public has given employment also to thousands of others in upward of a dozen trades, according to Mr. Lock-

wood. Miniature golf is said to have been started on a commercial basis in the Southwest through the joint efforts of three individuals and later developed by a hotel owner in Tennessee who used cottonseed hulls for fairways and greens.

New West Virginia Gas Line

Charleston, W. Va.—Plans have been announced for the further development of the properties of the West Virginia Gas Corp., control of which was recently acquired by the Appalachian Gas Corp., of this city, H. E. Danner, vice-president. A new pipeline will be laid to convey gas from the Monickel field in Lincoln County, West Virginia, to connect the pipeline of the Monickel Gas Co., a subsidiary of the West Virginia Gas Corp., extending from the Cabell County field to Huntington, W. Va., with the Buffalo Creek field pipeline of the Allegheny Gas Corp., in which the Appalachian Gas Corp. owns a 36 per cent stock interest. Gas delivered through the new line will augment the supply now sold to the International Nickel Co. and the Owens-Illinois Glass Co. Other improvements will include new gas wells and interlinking lines to connect other companies of the Appalachian Gas group in the West Virginia natural gas fields. Work is expected to be completed by September 1.

\$6,000,000 NATURAL GAS PROJECT

**Moody-Seagraves Gas Company to Lay
233 Miles Main Lines.**

Lafayette, La.—The Moody-Seagraves Gas Company, wholly owned subsidiary of the United Gas Company, Houston, Tex., has been granted franchises to distribute natural gas in the following Louisiana communities: De Quincy, Lake Charles, Crowley, Jennings, Kinder, Lafayette, Oberlin, Rayne, Sulphur, Welsh, West Lake, Broussard, Church Point, De Ridder, Elizabeth, Elton, Glenmora, Ludington, Oakdale, St. Martinville, Vinton, Youngsville, Abbeville, Breaux Bridge, Bunkie, Cheneyville, Erath, Eunice, Franklin, Jeanerette, LeCompte, Milton, New Iberia, Opelousas, Washington, Cottonport, Leesville, Longbridge, Mansura, Marksville, Merryville and Ville Platte. The project will involve an estimated expenditure of \$6,124,938 and will cover the installation of 233 miles of main lines, including 62 miles of 16-inch, 18 miles of 14-inch, 27 miles of 12-inch, 28 miles of 10-inch, 60 miles of 8-inch, 31 miles of 6-inch and 7 miles of 4-inch pipe. All the cities will be piped for distribution, except Lafayette and Lake Charles which now use artificial gas. Franchises are expected to be delivered this month, the company agreeing to complete the project and deliver gas within a year. With large quantities of raw material available in these sections of Louisiana, the advent of natural gas, as a cheap fuel for mill and factory and other industrial operations, will open a new era, it is thought, in the development of this portion of the state.

1100-MILE PIPELINE STARTED

**Gulf Company's Project Will Connect
Oklahoma Fields With Pennsylvania
Refineries**

Monnett, Mo. — Construction has started on the 1100-mile pipeline project of the Gulf Pipe Line Company of Pennsylvania, Pittsburgh, to connect the oil fields of Oklahoma with refineries in the Pittsburgh district of Pennsylvania. The line will enter Missouri from the southwest at McDonald County and continue through Newton, Barry, Christian, Lawrence, Greene and Webster counties, crossing the Mississippi River at Pevely, about 15 miles south of St. Louis. The greater portion of the line will be of 10-inch pipe, with a 6-inch branch to Cincinnati. The cost of the project has not been announced, but it is understood that pump stations along the route will alone cost more than \$6,000,000.

1400-ACRE BEACH RESORT PROJECT

\$1,500,000 Contracts Embrace \$1,000,000 Causeway, Hotel and Other Facilities

Port Isabel, Tex.—Prosecuting its plans for the construction of a beach resort here, the Port Isabel Bridge Co., Inc., awarded contract to the General Engineering & Development Corp., New York, to construct a fill and timber causeway from Port Isabel across Lagoona Madre to Padre Island, about 14,000 feet, and to build a street some 2800 feet from the end of the causeway across the island to the Gulf of Mexico. This contract also covers the construction of a 150-room hotel, bath house and casino. It will involve an outlay of \$1,500,000, of which the causeway will represent \$1,000,000. This is the first of a series of contracts to be awarded in connection with the development and bids will be opened September 2 for additional construction. Plans and specifications may be obtained from V. L. Conrad, engineer in charge, Woolworth Building, Brownsville, Tex.

\$600,000 Hotel and Recreation Center

Greensboro, N. C.—Construction of a hotel and recreation center at West Gaston and Eugene streets at a cost of \$600,000, is planned by the Civic Center Corporation, of which Charles L. Van Noppen is president. The hotel, to be known as the Van Noppen Hotel, will be 8 stories and basement and will contain 150 rooms. Other facilities will include a garage and service station, tennis courts, miniature golf course, bowling gardens and other features. Charles C. Hartmann, Greensboro, is the architect.

\$3,000,000 Power Plant 50 Per Cent Complete

Bremo Bluff, Va.—Construction of the \$3,000,000 steam power plant here for the Virginia Public Service Co., Charlottesville, is 50 per cent complete and it is thought the first unit will be ready to deliver power in January. Several hundred men are engaged, working on day and night shifts. The first unit will have an initial installed capacity of 40,000 horsepower, which will be increased later to 134,000 horsepower and ultimately to 287,000 horsepower. A large force of men is engaged cutting and preparing a right-of-way from the plant to Charlottesville, a distance of about 30 miles, to carry two parallel tower lines. Another tower line will

extend south from the plant probably to Farmville and South Boston.

Boilers will be of the single pass vertical type, with furnaces for burning pulverized coal. Water will be brought from the James River for condensing purposes through a large flume tunneled under the tracks of the Chesapeake and Ohio Railway Co. Allen J. Saville, Inc., Richmond, Va., was awarded contract for excavation and the L. E. Myers Co., New York, general construction contract. Turbo-generators and condensers are being supplied by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., and high pressure boilers by the Babcock & Wilcox Co., New York.

Louisiana Salt Development

Winfield, La.—Under the terms of a contract recently awarded the Dravo Contracting Co., Pittsburgh, Pa., by the Louisiana Development Co., the former plans to sink a shaft 440 feet to a salt deposit, passing through an overburden of water-bearing limestone. After the seal has been made the shaft will be carried 310 feet into the salt, making a total depth of shaft of 750 feet, at which level the Louisiana Development Co. will begin mining operations. The sinking of the shaft through the water-bearing ground will present an unusual and difficult problem, it is said, and will require the application of special grouting methods. The Dravo contract does not contemplate any surface construction, as this part of the work will be let separately.

Railway Construction Progressing

Birmingham, Mo.—Construction work on section 4 of joint double track railway line in northern Missouri for the Chicago, Rock Island & Gulf Railway Co., and the Chicago, Milwaukee, St. Paul & Pacific Railroad Co., about 7 miles, is about 35 per cent complete. The Winston Bros. Co., Minneapolis, Minn., is handling general contract and most of the grading is being done by that company, employing four shovels and trucks. A little later the company plans to use two 36-inch gauge outfits in making some long hauls. Team work has been awarded to Shugart & Blythe, Nevada, Mo., who are working 4 grading-machine outfits and one Fresno outfit. Concrete culverts are being placed by Condon & Cunningham, Omaha, Neb., while a bridge over Crooked River is being constructed by Winston Bros. forces working double shift.

\$800,000 Embassy Building

Washington, D. C.—General contract to erect an \$800,000 building here for the Japanese Embassy will be awarded to James Stewart & Co., Inc., New York, who rendered a satisfactory estimate but encountered difficulty with the foundations. Plans for the foundations have been revised and the Stewart organization will soon submit another estimate, after which construction is expected to be authorized. Delano & Aldrich, New York, are the architects.

Employment and Money for the South

Almost immediate employment for thousands of men in the allocation of millions of dollars in the South is virtually promised by the Federal Government in announcement that it will make available on September 1 part of \$125,000,000 for road work which otherwise would not be available until January 1. The money will be used in drought-stricken counties to create employment as a practical relief measure. Advancing the highway improvement program will also benefit general business and in the South especially the work can be carried on through the winter.

Of this total of \$125,000,000, the entire South ultimately will receive approximately \$43,750,000, and the drought-affected counties in the Southern States for which immediate relief is to be provided will receive a substantial percentage, in pro rata allotment, from the South's total Federal road building funds.

The Southern States whose Governors recently were invited to the Government drought conference, as representing the areas most seriously affected, were Arkansas, Kentucky, Missouri, Tennessee, Virginia and West Virginia. Roughly speaking, Arkansas will receive about 5 per cent of the South's good roads allotment; Kentucky, 5½ per cent; Missouri, 10 per cent; Tennessee, 7 per cent; Virginia, 5½ per cent; West Virginia, 3 per cent. The affected counties in each of these States will receive heavy shares of these percentages.

As Secretary Hyde of the Department of Agriculture had named eight counties in Maryland as suffering from the drought, it is not improbable that part of this State will be added to the Southern list.

Forty-four counties in West Virginia were named by Secretary Hyde and 72 in Virginia.

LETTERS FROM OUR READERS

Louisiana Needs to Develop a Poultry Industry

Miraflores Poultry Yards.

Hammond, La.

Editor Manufacturers Record:

Louisiana is in need of hatcheries and poultry yards. As demand cannot be supplied locally, it means a continued outflow of money into the business channels of other states for eggs, baby chicks and mature stock. This is evidenced by the large stock of eggs shipped into the market center at New Orleans, and also in the large amount of live and dressed poultry. That Louisiana cannot supply this demand is further shown in the fact that we were unable to purchase our stock in this state.

During the four years the writer has spent in the South (having come from the West), he has followed with interest the work of the MANUFACTURERS RECORD for industrial development. When in newspaper work I read from time to time the many articles about the South, particularly those dealing with Louisiana, and your front cover editorials. You are doing a great work for the industrial South, and there is no doubt that you have in large measure been responsible for turning the tide of capital southward, and reversing the saying, "Go West" to "Go South."

LEONARD A. PHILLIPS.

Causes of Silver Fluctuation

Chicago, Ill.

Editor Manufacturers Record:

The trader class people in America, closely hooked up with their brothers in Europe, are engaged in weaving hair cloth and fabricating it into shirts. Strenuously are they at work, trying to force Mr. Hoover to wear these shirts. The trader class people of England are losing their power. The latest news from London shows that the money power has switched to Baldwin in his efforts to build a wall around all the Colonies, to force them into a close hookup with the mother country, so that England's manufacturers can again prosper.

I wrote Mr. Baldwin, telling him that

my whole life has been devoted to the metals craft, and expressing my admiration and sympathy for the great fight put up by Chamberlain in favor of a protective tariff, and urging on Baldwin to do likewise. I accused his trading and banking people of being guilty of causing a crisis, which now menaces every country on earth, with millions of people out of work. Also, I sent him a chart designed by me to give a bird's eye view of the economic conditions of the world since 1875.

For prior centuries, silver and gold were practically at an even value at the ratio of 16 to 1. The whole world enjoyed prosperity and a living standard as though they were on a gold basis. High tariffs, shutting off the free flow of goods from one country to another, were adopted later, to jealously guard the hoard of gold held as reserve to redeem the paper money, used by a country which had gone on a gold basis. I find no fault with London for setting up the rule that all final payments for trade balances must be made in gold.

London now proves that high tariffs must be adopted; fear of a gold famine drives them to it. In 1885, the buying power of the silver dollar, Mexican, fell to 60 cents. Europe suffered by this decline. In 1895, the buying power of the same silver dollar fell to 40 cents. This caused a world panic. Selfish owners of silver mines in America sat in the Senate for 20 years till Grover Cleveland stopped the flood of silver and divided his party.

In 1921, the big-four silver kings of London met in secret session and looked eastward to India, seeing 300,000,000 ounces of idle silver.

"Let us put it to work," they said, "but first we must get the powers that be to put the silver paper rupee on a gold basis, then this silver is free. Uncle Sam always has a heavy trade balance yearly due India. He is rich in gold; let his be the burden to keep the rupee value fixed."

In 1930, the silver kings of London are setting an ever lower price on India's silver. England does not lose; it is India that will stand the loss of nearly \$200,000,000. This silver is being moved to Shanghai, the future national mint for China, now ready to mint untold numbers of 40 cents Sun dollars.

This mint is in Shanghai, under control of the guns of English warships.

Ortiz Rubio, President of Mexico, is soon to call a world parley over the silver crisis, I have written him, suggesting he call in the manufacturing countries, so the question will be settled right—a question of market for the surplus products; food and things of comfort for all.

LEWIS W. HARTSIG.

Observation and Philosophy

Kingsport, Tenn.

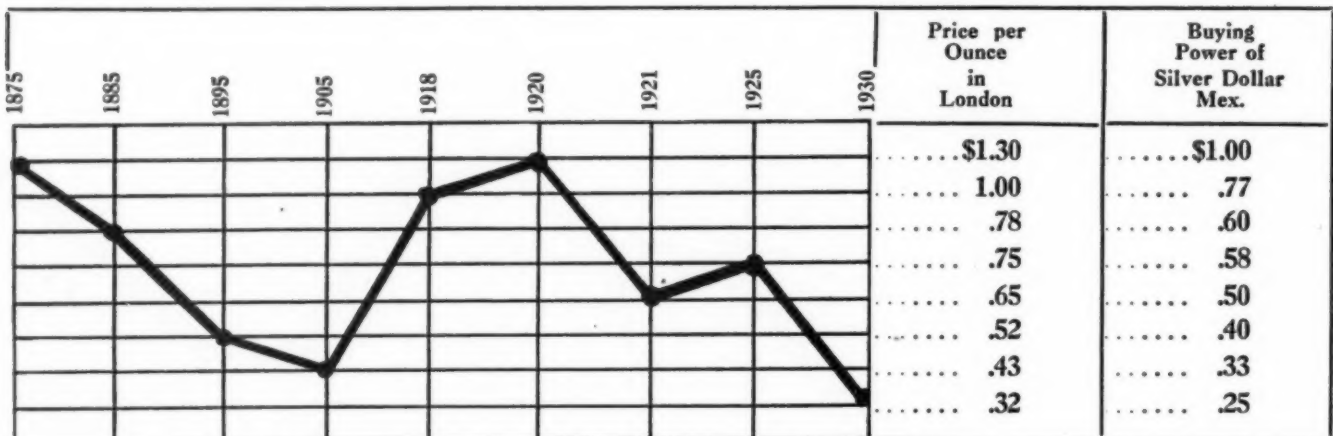
Editor Manufacturers Record:

I have been to Florida and have studied California very thoroughly, but never had I thought particularly of the Rio Grande Valley, until last May, when my brother and I had an opportunity to go there and to investigate the soil, to enjoy the climate and to note the progress the people are making. It far surpassed anything that I had expected to find, and we have invested there in a winter home for ourselves.

Originally, I intended to drive through New Orleans, as I like that city and the country in general from Chattanooga on, but a friend informed me that "the only way" was via Memphis, as that route was hard-surfaced and would save wear and tear on my car, and also was much shorter. I find that Tennessee is ahead of some States which have not awakened to the fact that one of the greatest factors in development is good transportation, at all seasons of the year, of the things that a State produces—transportation by good roads and good railroads. There is no accurate way that I know to estimate the loss to backward States in money not spent at hotels, gas stations and so on, because of their slowness in grasping the advanced idea of good-roads transportation.

I can see that we are holding ourselves back, in places, by not going on with adequate road improvements, and also that we hold others back whenever and wherever we are not progressive. It just seems to me that every penny we spend helps the other fellow as much as it does ourselves. Isn't it a funny world!

C. L. BACHMAN.



IRON, STEEL AND METAL MARKET

Light Bookings and Low Rate of Production in Steel

Pittsburgh, August 18—[Special.]—Steel conditions have had a slight turn for the worse, observable both in the volume of buying and in the rate of production. One large steel interest had the lightest bookings in any week since 1922. Steel ingot production in July averaged 56.35 per cent, with no visible swing upward or downward during the month, and the rate now is below that. One estimate puts the rate down to 52 per cent but that is probably too far.

The downturn at this time is a striking one for the reason that seasonal improvement, when there is any, is regularly visible by this date. There is a possibility, however, that summer dullness is merely prolonged at this end, just as it began two or three weeks earlier than usual. There is an unusual amount of vacationing, perhaps partly result and partly cause of the general trade dullness.

The influence of the unprecedented drought upon business generally and upon steel demand in particular, may easily be exaggerated and indeed is altogether likely to be, by observers using old standards. Statistics of the National Bureau of Economic Research issued some time ago showed that of the total income of the people of the United States the agricultural income was 18.5 per cent in 1919, the proportion decreasing almost constantly year by year until it was only 9.1 per cent in 1928, the last year reported upon.

One thing is clear, that the mill products like sheets, nails and fence, also farm implements and automobiles that farmers would be expected to buy if there had been no drought, have been very dull lately, hence if the drought has much effect it will be by way of reducing a trade improvement rather than by way of making recent conditions worse.

Two steel outlets are doing very well indeed, line pipe and fabricated structural. All producers of line pipe are operating at capacity and are booked for at least some little distance ahead while there are promising line pipe projects likely to come to a head this year, some within a very few weeks. Chances are that orders will be placed even for delivery through the winter, to avoid delays in laying pipe next season. Capacity to produce line pipe is increasing. At the present time line pipe manufacture may be estimated as absorbing close to 10 per cent of the total steel

production, but this represents only about 5 per cent of total steel making capacity. By the end of the year line pipe capacity may be one-fourth to one-third greater. On the other hand ordinary standard or merchant pipe is dull, even duller than two or three months ago.

Fabricated structural steel lettings since July 1 have averaged a trifle above the rate during the first half of the year, which was a good one, not much below that of last year, and new projects coming out in the last couple of months for bids have exceeded the amount of business placed, so that there are good prospects for lettings in future.

The very spotty character of steel demand is thus evident, for with these two items making such a good showing there is extreme dullness in some lines of consumption. The automobile industry is running at quite a moderate pace and it has not been taking steel lately at a rate commensurate with its reported production, which is evidently partly on stocks of steel and parts. There are scarcely even guesses as to what automobile production will be like in future. The farm implement industry has been in its between-seasons period and the question now is whether it will emerge.

Finished steel prices show still more easiness in several directions. Bars, shapes and plates, hitherto quoted at 1.65c to 1.70c, may now be quoted at 1.65c as even single carloads of bars can be bought at that figure, and on attractive orders there is shading. Galvanized sheets above 3.10c have disappeared. There is some fresh shading in strips.

Modest Activity in Pig Iron

Birmingham, Ala., August 18—[Special.]—The pig iron market is beating time. Addition to surplus stock of foundry iron is seen though the aggregate is not alarming. Base price in the home territory is firm at \$14, No. 2 foundry. The better tone to the market is probably caused by the fact that there is not much iron being carried on yards of the various melters and operations continue fairly active. Consumers are purchasing for needs of a few weeks ahead and specifying against contracts. Shipments of cast iron pressure pipe are still good but new lettings are not numerous.

Smaller melters of pig iron are buying against needs only. Foundries and machine shops are doing well, those working on heavy machinery, and others which are giving attention to automotive

and general repair work. Two shops of the Jones & Hernandez Machine & Foundry Co., both well equipped with modern machines and doing general though light machine work, are busy and are more than sharing in the general activity.

Estimate on steel production and finishing mills operation continues at around 60 per cent capacity. Thirteen of the 23 open hearth furnaces are manufacturing ingots. Sheet and plate demand is fluctuating, the mills operating three and four days a week. Smaller mills are doing well. Gulf States Steel Company is operating at around 60 per cent, with three of its six open hearth furnaces in commission. The sheet mill will be on commercial operation September 1. It is expected that the next 12 months development will include a second blast furnace, doubling the by-product coke works and adding to the open hearth furnaces.

Excavations for the several buildings in the development program of the Tennessee Coal, Iron & Railroad Company at Fairfield are well progressed and it will not be many weeks before structural steel will be going up. Developments include an additional open hearth furnace of 150-tons capacity, a strip mill, addition to the sheet mill and improvements in the plate mill.

Southern Steel Company is erecting the structure for the addition to the mono-cast shop of the American Cast Iron Pipe Company, 750 tons of steel having been fabricated. Tank shops of the district have prospered by development of the gasoline and oil distributing plans of the major and even smaller oil companies, with filling stations, bulk stations and other storage plans requiring considerable tank tonnage. Plate is used in quantity by these shops. Structural steel fabricators have felt a little impetus in trade from airport activity.

Coal mining activity has eased off considerably during the past few weeks and mine output is at a minimum. Coke production has been cut down, especially by the steel manufacturers.

QUOTATIONS ON PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.50; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL.

Old steel axles	\$19.00 to \$20.00
Old iron axles	17.00 to 18.00
Old steel rails	11.00 to 12.00
Heavy melting steel.....	10.50 to 12.00
No. 1 cast.....	12.00 to 13.00
Stove plate	10.00 to 11.00
No. 1 railroad wrought.....	10.00 to 10.50
Old car wheels	10.00 to 10.50
Old tramcar wheels	10.50 to 11.50
Machine shop turnings.....	7.50 to 8.50
Cast-iron borings	7.50 to 8.50
Cast-iron borings (chem.)....	12.00 to 13.00
Re-rolling rails	12.00 to 13.00

Tennessee Enlarges Highway Construction Program

1930 to Be Banner Year, with More Than \$27,000,000 in New Work Under Way

By

T. C. McEWEN, Chief Engineer,
Department of Highways and
Public Works

THE highway construction program in Tennessee is being pushed toward a connected primary system of paved highways throughout the State. Last year, 1929, the Department expended slightly more than \$21,500,000 on construction, exclusive of special bridges, and started this year with an even larger program. Construction let to contract and carried over into the present year as active projects amounted to \$10,000,000 and to this will be added approximately \$21,000,000 of contract work and some \$6,000,000 in construction to be done by Department forces, making a total of \$27,000,000 in new work to be placed under construction in 1930. In addition to the \$10,000,000 contract liability carried over from 1929, the Department had major projects under way, using its own forces, requiring \$1,168,000 in additional work to complete.

\$17,000,000 in New Work in First Six Months of 1930

To June 27, 11 contract lettings were scheduled with total contracts awarded to the amount of \$12,269,393. In addition, \$4,800,000 has been authorized for State forces and the work is under way, making a total of a little more than \$17,000,000 in new work placed under construction since January 1.

The remaining \$9,000,000 worth of work on the year's program will start as soon as plans and specifications can be prepared. Present indications are that \$8,000,000 additional will be placed under contract and \$1,000,000 more be authorized for State forces. This means that the primary system, east and west, and north and south, will be connected with paved highways and principal inter-county highways will be relocated and graded ready for progressive improvement.

Favorable weather conditions in the late spring and early summer made it possible to carry forward the work with full force. To the present time, \$7,500,000 for contract work and \$1,500,000 for State forces has been disbursed and the rate is increasing. During May, disbursements for contract work were \$1,790,000 and for June they had reached \$1,800,000. Following the rate of increase for previous seasons, dis-

bursements should reach \$3,000,000 during October. Disbursements for Department construction have reached \$325,000 per month and they should reach double this amount in August or by September. Indications are that more work will be completed this year than will be placed under contract, thus carrying into next year less than \$10,000,000 in uncompleted construction.

Over \$320,000 Expended Monthly for Maintenance

The regular maintenance program is being continued and in some areas it has been enlarged. The budget for labor and materials is \$2,500,000 for the year with \$1,100,000 added for equipment. Expenditures on this work have reached \$320,000 per month. In addition to maintenance on the State System, the State is charged with supervision of similar work on primary county highways. The budget for county work this year is \$2,000,000 and the rate of expenditure has reached \$210,000 per month.

Tennessee has probably suffered less during the present business depression than some of its neighbors; still there is much unemployment. The large activities of the Highway Department have furnished work at a very opportune time. Outside the thousands of men employed by contractors, the Department is carrying on its own payrolls, 12,000 persons, and is disbursing \$600,000 per month in salaries and wages. Contract prices are low, most of the work being awarded at figures much less than the engineers' estimates. The State is getting work done at very reasonable prices, the unemployment situation is somewhat relieved and the contractors are able to keep their organizations together.

\$13,800,000 for Special Bridge Projects Over Major Rivers

The bridge building program has been outstanding in the past three years. In all, \$13,800,000 has been appropriated for large structures over major rivers of the State. Sixteen of these bridges

have already been let to contract and seven have been completed and opened to travel. By September 1, four additional major structures should be completed, leaving five structures still under contract. By the end of the present year or the beginning of 1931, four additional bridge contracts will be awarded, taking up the balance of the appropriation of approximately \$3,500,000. The total bridge program should fall somewhat under the \$13,800,000 originally appropriated, because of prices the Department has been able to get on work already let to contract. Bridges already completed are located at Obion, on the Obion River, Kyles Ford and Sneedville, on the Clinch River, Niles Ferry on the Little Tennessee, Russels Ferry on the Hiawasee, and Loudon and Perryville, over the Tennessee. Three other major structures over the Tennessee River at Savannah, Trotters Landing and the Big Sandy will be completed by September 1. A fourth structure located at Dover, across the Cumberland, should be opened to travel by that time.

Completion of bridges at Loudon, Trotters Landing, Perryville, and Savannah will remove ferries from the main east and west connections across the State. This will be a boon not only to Tennessee but to the neighboring states because of the great increase in tourist travel over these routes.

1930 Concrete Pavement Awards Set New High Figure

Total awards for concrete pavements for this year in the United States passed the 100,000,000 square yard mark August 2, according to Wm. M. Kinney, general manager of the Portland Cement Association, Chicago. This mark was reached three weeks ahead of last year and the total was greater than that of any previous year.

Of the total awards 77,700,000 square yards are for concrete roads, and 23,000,000 square yards for streets and alleys. On August 2 of last year concrete road awards totaled 62,190,000 square yards and in the record year of 1928, 62,400,000 square yards. The 1930 road total of this date is therefore over 15,000,000 square yards ahead of last year and the record year of 1928.

NEW AND IMPROVED EQUIPMENT

Stock Drive for Power Application

The Diamond Chain & Mfg. Co., Indianapolis, Ind., announces new stock drives for standard power applications. The drive consists of a Diamond roller chain and two Diamond sprockets, ready

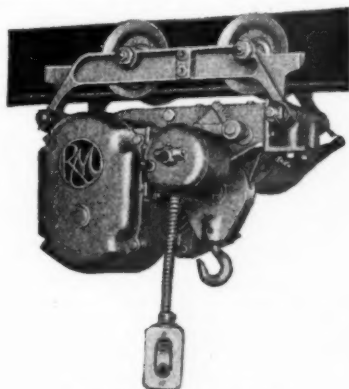


Diamond Roller Chain and Two Sprockets

to be installed, and are carried in stock, it is stated, by distributors and supply-houses in leading centers in single to quadruple strands, from $\frac{1}{4}$ to 75 horsepower, in ratios up to 8.4 to 1 and for motor speeds up to 1750 r. p. m. With their use, the advantages of Diamond roller chain and sprockets are made more readily available where no special design-problem is encountered. These supplement the regular line of Diamond high speed drives which handle up to 672 horsepower and speeds up to 3600 r. p. m.

A Powerful Hoist, Small and Light

The hoist and crane division of Robbins & Myers, Inc., Springfield, Ohio, announce the Bantam hoist, latest addi-



Bantam Electric Hoist

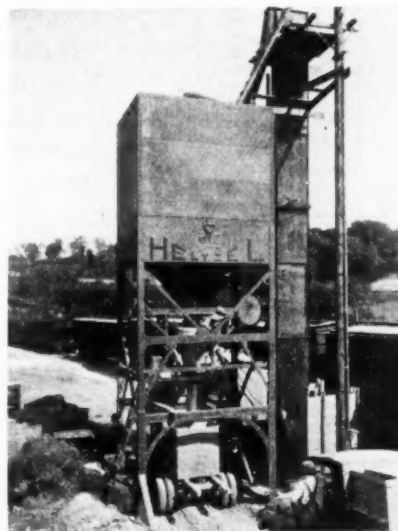
tion to their line of electrical hoists. Outstanding features are its light weight—130 pounds complete with trolley and 110 pounds without; small size—overall

dimensions of 18 inches by 24 inches by 14 inches; speedy operation—30 feet per minute; 500-pound capacity; specially designed Robbins & Myers hoist motor; simple and positive lubrication; aluminum finish and rugged construction. It is made in types suitable for alternating and direct current circuits, with rope or push button control. The frame is designed to permit use of standard I-beam trolley or of monorail trolley.

Cement Batching and Storing Equipment

The Heltzel Steel Form and Iron Company, Warren, Ohio, manufacturers of steel forms and platework, now produce complete equipment for storing and batching bulk cement. The basic bin of the Heltzel plant is a portable all-riveted unit with a capacity of 125 barrels of cement, and through an inexpensive extension this capacity may be increased to 320 barrels. The bin is loaded by a vertical elevator, and when desired a power shovel may be furnished to unload bulk cement from box cars. Flow of cement from bin to the batcher

is controlled by a rotary valve arrangement. The batcher is dustproof, making use of a dust jacket unnecessary and eliminating waste through dusting.



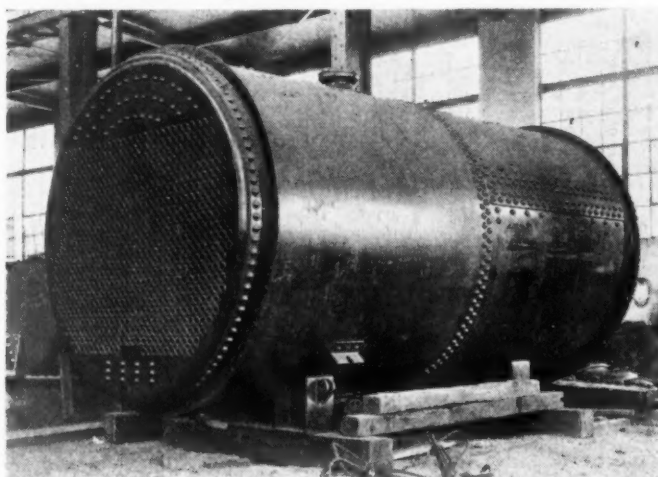
Heltzel Bin, Loaded by Vertical Elevator

Weighing is by an automatic springless dial type scale, permitting the operator to back check each batch without moving counterpoises.

Utilization of Waste Heat

Designed to utilize waste heat, 6 boilers have been delivered to the Great Lakes Steel Company, Detroit, Mich., by the Hedges-Walsh-Weidner Company, Chattanooga, Tenn. The units were fabricated in Chattanooga and are 9 feet in diameter, 18 feet long, weigh 68,000 pounds each, and are designed to withstand a pressure of 160 pounds. A structural feature are the tubes which number 704 in each boiler, and are 2

inches by 18 feet, with a total of 12,672 lineal feet in each boiler. While utilization of waste heat has been practiced for some time in the cement industry, the practice is said to be spreading to other industries, making for economy in fuel and operating cost. Heat from various types of furnaces such as the open hearth furnace in the steel industry is carried to the boilers through flues and utilized, whereas formerly it escaped through the smoke stack. Chemical plants and paper mills also have adopted the practice.



This
Boiler
Has
704 Tubes,
Each
2 Inches
by
18 Feet.
It is
9 Feet
in Diameter.

CONSTRUCTION DEPARTMENT

and

NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Montgomery—U. S. Army, c/o Capt. M. A. McFadden, Constr. Q. M., soon call for bids for 4 hangars, 110x240 ft.; plans nearing completion.

Arkansas—Cities of Augusta and Camden contemplate establishing airports.

Ark., Arkansas City—Junior Chamber of Commerce, reported, interested in development of airport.

Fla., Pensacola—Pensacola Aero Corp., chartered; B. M. Hill, 108 W. Romana St.

La., Alexandria—City, reported, plans improvements to airport, erect hangars; install filling station.

La., Baton Rouge—Southern Steel Works Co., 908 Lucien Ave., Birmingham, Ala., has contract for 115 tons struc. shapes for hangars, buildings, etc. 7-31

La., Shreveport—Cahn Electric Co., Inc., 708 Milam St., reported, low bidder for field lighting system at municipal airport. 7-31

Miss., Corinth—City contemplates establishing airport.

Miss., Greenville—City votes Sept. 11 on \$30,000 airport bonds. 8-7

Miss., Laurel—G. L. Lightsey, City Clk., receives bids Aug. 25 for clearing and grubbing certain portions of airport, Sec. A-19 acres; Sec. B-20 acres, Sec. C-17 acres; plans, etc., at office City Engr. and city clerk. 8-7

Miss., Meridian—Ingalls Iron Works Co., 720 Fourth Ave., S., Birmingham, Ala., reported, has contract for 150 tons struc. shapes for municipal hangar. 8-7

Mo., Kirksville—City contemplates establishing airport.

Mo., St. Louis—Bd. of Public Service, reported, let contract to Bridges Asphalt Paving Co., 1411 Central Industrial St., at \$65,000, for additional runway at St. Louis Municipal Flying Field. 6-5

Okla., Oklahoma City—National Aircraft, Inc., chartered; Claude E. Alkman, 909 E. 18th St.

Tenn., Collierville—Mannercraft Airplane Corp., H. W. Mann, Jr., Gen. Mgr., reported, erect plant, 60x120 ft.; install lathes, drill presses and electric motors. 6-26

Tenn., Knoxville—Tom Kesterson, Lowes Ferry Pk., reported, construct hangar to accommodate 6 planes on Dickinson Island. 6-19

Tenn., McKenzie—City contemplates establishing airport.

Tex., Eagle Pass—City, Chamber of Commerce, Judge Walter O. Fitch, Pres., reported, interested in acquisition of site and development of airport, park and swimming pool.

Tex., Post—Chamber of Commerce, George Sanson, Sec., reported, interested in development airport.

W. Va., Wheeling—Ohio County Comms., Orion S. Koller, Pres., votes in November on \$800,000 airport bonds.

Bridges, Culverts and Viaducts

Proposed Construction

Arkansas—State Highway Comsn. has low bids for 5 bridges. See Roads, Streets, Paving.

Alabama—State Highway Comsn. receives bids for 9 bridges. See Roads, Streets, Paving.

Ark., DeQueen—Texarkana & Fort Smith Ry., W. G. Morgan, Ch. Engr., Texarkana, has preliminary plans for rein. conc., steel bridge over Little River, Morris Ferry.

Ga., Atlanta—City, I. N. Ragsdale, Mayor, considering culverts on Fair St. near Whiteford Ave., preparatory to widening thoroughfare.

Ga., Columbus—Following estimating on general contract for viaducts over Central of Georgia and Seaboard Air Line tracks, underpass under tracks at Eastview and conc. culvert, all Brown Ave., bids to be opened by Muscogee County, R. H. Barnes, Clk., Aug. 27: J. B. McCrary Co., Citizens & Southern Bank Bldg.; Davis Construction Co., Rhodes-Haverty Bldg.; Brooke-Darden Co., Marietta Bldg., all Atlanta; Hardaway Contracting Co., Georgia Home Bldg.; Campbell Contracting Co., Box 592; Barlow-Gordy Co., Garrard Bldg., all Columbus; Cornell-Young Co., Georgia Casualty Bldg.; Macon; Rust Engineering Co., Woodward Bldg., Birmingham, Ala.; C. L. Rhodes, County Engr. 8-14

Kentucky—State Highway Comsn., Ben Johnson, Chmn., Frankfort, opens bids Sept. 18 for 4 bridges: Over Kentucky River near Tyrone, consists of 360-ft. steel truss span, 2 224-ft. steel truss spans, 3 60-ft. and 6 43-ft. steel I-beam spans and rein. conc. piers and abutments; Cumberland River at Canton, 2 320-ft. steel truss spans, 2 120-ft. steel truss spans, 48 45-ft. I-beam spans, steel towers and rein. conc. piers and abutments; Tennessee River at Eggners Ferry, 366-ft. steel truss span, 3 320-ft. steel truss spans, 2 150-ft. steel truss spans, 38 45-ft. steel I-beam spans, steel towers and rein. conc. piers and abutments; Ohio River at Carrollton, continuous steel truss 1538 ft. long, composed of 2 769-ft. spans and 2 382-ft. steel truss spans, 6 98-ft. steel truss spans, 234-ft. 6-in. conc. girder spans, rein. conc. piers, abutments and retaining walls; H. D. Palmore, State Highway Engr. 7-31

Ky., Elizabethtown—State Highway Comsn., Ben Johnson, Chmn., Frankfort, opens bids Sept. 23 for fill approaches to Nolin River bridge at Red Mills on Elizabethtown-Hodgenville road.

Kentucky—War Dept., Washington, reappraised plans State Highway Dept., Frankfort, for 12 bridges at Maysville, Carrollton, Ashland, Tyrone, Boonesboro, Paducah, Eggners Ferry, Spottsville, Canton, Smithland and 2 at Burnside. 7-31

Ky., Paducah—State Highway Comsn., Ben Johnson, Chmn., Frankfort, opens bids Sept. 15 for bridge over Tennessee River near here; 3 400-ft. steel truss spans, 10 100-ft. plate girder spans, 60-ft. plate girder span, 12 46-ft. I-beam spans, 4 45-ft. I-beam spans and rein. conc. piers and abutments; H. D. Palmore, State Highway Engr.

La., Natchitoches—Red River and Natchitoches Parishes Police Jury receives bids Aug. 25 for creosoted pile trestle bridge across Bayou Pierre at Jim Island.

La., Natchitoches—Natchitoches Parish Police Jury, F. G. Kelley, Pres., receives bids Sept. 8 for bridge across Little River.

Maryland—State Roads Comsn., received low bids for 3 bridges. See Roads, Streets, Paving.

Md., Lanhan—State Roads Comsn., Baltimore, has low bid from Victor A. Pyles Co., 527 Chesapeake Ave., Brooklyn, Baltimore, at \$65,308, for bridge over Pennsylvania R. R. tracks, Defense Highway; L. H. Steuart, Secy. 7-31

Miss., Anguilla—Sharkley County Bd. of Supvrs., W. H. Carroll, Clk., Rolling Fork, Miss., opens bids Sept. 1 for bridge across Deer Creek.

Miss., Holly Springs—Marshall County Bd. of Supvrs., J. T. Wade, Clk., open bids Sept. 2 for four bridges: 60-ft. bridge on Shilnault road, Dist. No. 3; 112-ft. pile bridge on Barton road, Dist. No. 3; 75-ft. pile bridge, Hernando road, Dist. No. 1; 450-ft. pile bridge, Dist. No. 2, across Coldwater Creek.

Miss., Walthall—Highway Comms. of Separate Road Dist. No. receive bids for 5 bridges. See Roads, Streets, Paving.

N. C., Charlotte—City, Robt. L. Brown, Commr. of Public Works, has low bid from Cochran & Ross, 601 W. Sixth St., for treated timber and steel bridge over Briar Creek, Commonwealth Ave. 8-7

N. C., Greensboro—See Roads, Streets, Paving.

Okla., Coyle—State Highway Comsn., A. R. Losh, Engr., Oklahoma City, probably rebuild 6-span bridge across Cimarron River, State Highway No. 33, recently burned.

Tenn., Nashville—See Roads, Streets, Paving.

Tex., Brownsville—General Engineering & Development Corp., Flatiron Bldg., New York, receives sub-bids Sept. 2 for fill and timber causeway from Port Isabel, 14,000 ft. across Lagoon Madre to Padre Island; 2800 ft. street from end of causeway across island to Gulf of Mexico; V. L. Conrad, Woodworth Bldg., Brownsville, Engr. in charge. 8-7 under Tex., Port Isabel.

Tex., Sherman—City plans expending \$100,000 for paving and bridges. See Financial News Columns.

Virginia—State Highway Dept. has low bids for 2 bridges. See Roads, Streets, Paving.

Va., Alexandria—City, and Arlington County, C. L. Kinnier, County Engr., Rosslyn, plan widening bridge across Four Mile Run at county line, Mount Vernon Ave.

West Virginia—State Road Comsn., C. P. Fortney, Chmn., Charleston, opens bids Sept. 9 for 2 bridges, over Harmon Creek, Brooke County, and over C. & O. Ry., Greenbrier county.

W. Va., Charleston—See Roads, Streets, Paving.

W. Va., Weirton—Pennsylvania R. R. Co., T. J. Skillman, Ch. Engr., Philadelphia, Pa., has low bid from Fort Pitt Bridge Co., Oliver Bldg., Pittsburgh, Pa., for 700 tons struc. steel for bridges.

Contracts Awarded

Fla., New Smyrna—City let contract to D. M. MacDonald for bridge from mainland to Smyrna Yacht Club Island. 7-31

Miss., Columbus—Lowndes County Bd. of Supvrs. let contract for 8 bridges and fills: Pile bridge, Barrentine Branch Dist. 1, conc. and wood bridge, Wold Road, Dist. 1, conc., Dist. 1, reflooring Black Creek

bridge, Dist. 2, pile bridge over Yellow Creek, Dist. 3, culvert, Weathers Pl., Millport road, Dist. 3, new floor on Luxapalla bridge, Dist. 3, wood bridge, Jemison mill, Dist. 3 all to Smith & Walters; for dirt fills Bishop bottom, Dist. 3, and Jamison Mill, Dist. 3, F. C. Fleming; dirt fill, Yellow Creek, Dist. 3, T. Perkerson.

Miss., Iuka—Tishomingo County Bd. of Supvrs., Omer J. Bullen, Clk., let contract to Champion Bridge Co., Wilmington, Ohio, for steel bridge across Bear Creek. 7-31

Miss., Kosciusko—Attala County Bd. of Supvrs. let contract to Lloyd Rone for bridge across Hurricane Creek.

Miss., Pontotoc—Pontotoc County Bd. of Supvrs., G. A. Young, Clk., let contract to W. D. Moore, Sarepta, for 2 bridges, Gwin's Creek and Yocona Creek, Road No. 40. 7-31

Mo., St. Charles—Wabash Ry. Co., M. F. Longwell, Ch. Engr., St. Louis, let contract to Missouri Valley Bridge & Iron Co., Leavenworth, Kans., for substructure for bridge over Missouri River.

Tennessee—Dept. of Highways and Public Works let contract for 2 bridges and approaches. See Roads, Streets, Paving.

Tex., Dallas—Northern Texas Traction Co., F. A. Townsend, V.-Pres. and Gen. Mgr., Fort Worth, let contract to Austin Bros. Bridge Co., 1813 Clarence St., Dallas, for \$500,000 street car viaduct to Oak Cliff across Trinity River, subject to approval of City Comsn. 7-31

Tex., Dallas—Union Terminal Co., Murrell L. Buckner, V.-Pres. and Gen. Mgr., let contract to T. H. Johnson, North Texas Bldg., for Cadiz St. underpass. 7-31

Tex., Brackettville—See Roads, Streets, Paving.

Canning and Packing Plants

Fla., Citra—Crosby & Wartmann, reported, remodeling and enlarging packing plant, 12 coloring rooms, install additional equipment; expend \$35,000. 6-26

Fla., Clearwater—Dilpako Packing Co., A. N. Dillard, Gen. Mgr., reported, plans improvement and installation additional machinery.

Fla., Frostproof—H. C. Sullivan will erect 1000 case canning plant on Third St. to be managed by Geo. Ridge.

Clayworking Plants

Tex., Houston—Harris County Brick and Tile Co. chartered; James H. Edmonds, 901 Barkdull St.

Coal Mines and Coke Ovens

Va., Danville—Red Bird Coal Co., capital \$25,000, incorporated; Guy Walton, 222 N. Main St.

Cotton Compresses and Gins

Ark., Blytheville—Lee-Coppedge Gin Co., incorporated; George M. Lee.

Miss., Mount Olive—Mount Olive Compress Co. let contract to S. M. Massengale, Collins, for extension to compress; erect addition 180 x 60 ft.; install equipment.

Mississippi—W. E. Ayres, Asst. Director in Charge, Delta Experiment Station, Stoneville, advises \$100,000 appropriated by Congress for erection and operation first year of experimental cotton research laboratory; activity will include tests of ginning, preparation of ginning, drying, cleaning, etc.; will erect 3 story laboratory building, 40x100 ft., steel and hollow tile; cotton storage house 28x65 ft. in process of construction.

Okla., Pauls Valley—Farmers Union Co-Operative Gin Co., capital \$25,000, incorporated; J. W. Shugart, T. L. Harris.

Tex., Big Spring—Big Spring Gin Co., capital \$60,000, chartered; Bob Weatherby, C. B. Williams.

Cottonseed-Oil Mills

Tex., San Antonio—South Texas Cotton Oil Co., 25th and Ashland St., Houston, reported, acquired holdings of Travis Cotton Seed Products Co., Fris City Road, including oil mill and cotton seed houses, and 20 acres land adjacent.

Drainage, Dreging and Irrigation

Ala., Birmingham—City, A. J. Hawkins, Engr., opens bids Sept. 10 for 137,000 cu. yd. earth excavation and 73,160 cu. yd. rock excavation, Section 1, Valley Creek drainage project, and for 63,900 cu. yd. earth excavation, 15,800 cu. yd. rock excavation, Section 2. 6-26

Miss., Indianola—Bd. of Commrs. of Beaver Dam Drainage Dist., Sunflower County, opens bids Aug. 29 for \$65,000 drainage system; Horace S. Stansel, Engr., Ruleville.

Miss., Pittsboro—Calhoun County Bd. of Drainage Commrs. opens bids Sept. 1 for opening, cleaning and repairing Ditch No. 4 (Hardin Creek canal), Loosascoona River Dist. No. 1.

Okla., Pauls Valley—Garvin County Commrs. plan drainage ditch, Wild Horse Creek; \$45,000; A. Rennie, Engr., Pauls Valley.

Okla., Purcell—Walnut Creek Drainage Dist. No. 1, J. D. Warner, Clk., let contract to J. D. Mann Construction Co., 815 W. Main St., Oklahoma City, for drainage work, including 1,000,000 cu. yd. dry earth excavation; J. C. Milliken, Engr., Southwest Natl. Bank Bldg., Oklahoma City.

Tex., Harlingen—Arroyo Navigation Dist., J. B. Chambers, Sr., Chmn., plans calling bids soon for dredging channel down Arroyo Colorado to Gulf of Mexico from Harlingen; \$500,000.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Fla., Fort Myers—City considering erection of electric light plant; Josiah Pitch, Mayor; may vote on bonds.

Fla., Ocala—Florida Power Corp., St. Petersburg, reported, closed contract with Superior Earth Co., James H. Gardner, Pres., Tulsa, Okla., to supply fullers earth plant with power and light; construct line from Fairfield, 6 miles. 7-24

Miss., Woodville—Town, Mary B. Scott, Clk., receives bids Sept. 2 for following equipment: 1 voltage regulator to be connected to exciters that have capacity of not less than 5 kw. and 7½ kw., 125 volts; one 100 to 500 g.p.m. pump direct connected to alternating current, motor of standard voltage and current.

Mo., Madison—Missouri Power & Light Co., Jefferson City, reported, applied to Public Service Comsn., Jefferson City, for permission to acquire electric distribution system of W. E. Trapp and Horace Dickerson.

N. C., Kinston—Westinghouse Electric & Mfg. Co., 426 Marietta St., Atlanta, Ga., erecting one 3500 kw. turbine generator with direct connected excitor at city lighting plant; generator equipped with a Griscom Russel air cooler; unit is addition to an existing plant wherein is installed a 1250 kw. General Electric turbine generator; to provide space for new generator one 300 kw engine driven generator is being dismantled; in addition to the generator Westinghouse also is installing one 3 panel switchboard with circuit breakers and replacing old breakers with 5 new circuit breakers; Wm. C. Olsen, Inc., 5 Exchange Place, Raleigh, in charge of engineering; plant serves city and vicinity. 7-31

N. C., Wilson—Town receives bids Aug. 28 for furnishing of labor and materials for constructing additions, extensions and improvements to power plant building; Wm. C. Olsen, Inc., Consol. Engrs., 5 Exchange Place, Raleigh. See Want Section—Bids Asked. 8-14

Tex., McAllen—City, F. E. Osborn, Mayor, plans installing electric light plant.

Va., Hopewell—Virginia Electric & Power Co., Richmond, reported, extend service through 13,200 volt line to Prince George Courthouse and Burrowsville to Babin Point; 29 miles.

Va., Overall—Republic Service Corp., Coatesville, Pa., are applying to Virginia Public Service Comsn., Charlottesville, for permission to erect hydro electric plant on south fork of the Shenandoah at Overall; plant will have capacity of 4500 kw.; 27 ft. head; Wm. C. Whitner & Co., Inc., Engrs., Electric Bldg., Richmond, retained to carry out project. 7-17

Va., Waynesboro—City voted to sell light and power plant to Virginia Public Service Co., Charlottesville. 7-24

W. Va., Paw Paw—Potomac Edison Co., Frederick, Md., reported, acquired from Val-

ley Electric Co., electric light plant; will be operated under management of Northern Virginia Power Co., J. M. Hawk, Supt., Winchester, Va.

West Virginia—West Virginia Power Co., subsidiary of Appalachian Electric Power Co., Charleston, will have hearing Sept. 30 before West Virginia Public Service Comsn., Charleston, on application for Bluestone project comprising 2 power developments on New River near Hinton; first development to be started will be 1 mile above Hinton, include dam 43 ft. high, reservoir with utility pondage capacity of 900,000,000 cu. ft. for normal operation and power station with capacity 31,000 h. p. 8-7

West Virginia—Appalachian Electric Power Co., Charleston, reported, granted permit to erect double circuit transmission line across Kanawha River from Bell to Cabin Creek; supply additional power to Dupont Ammonia Co.'s plant at Belle.

Fertilizer Plants

Fla., Winter Haven—W. D. Yonally, reported, interested in erection of 100 ton fertilizer plant on Eloise Rd.

Miss., Gulfport—A. Ziegenfelder, Hewes Bldg., reported, has contract for 50x100 ft. addition to Davison Gulfport Fertilizer Co.'s plant.

N. C., Kinston—Smith Douglas Co., Inc., Board of Trade Bldg., Norfolk, Va., erecting \$50,000, 1 story factory S. W. Kinston. -17

Flour, Feed and Meal Mills

Ark., Wilson—Wilson Milling Co., chartered; R. E. Wilson.

Mo., Carthage—McDaniel Milling Co., reported, rebuild burned packing plant.

Tex., Fort Worth—Kimball Milling Co., 1800 S. Main St., erect rein. conc. grain storage building, 2100 S. Main St.; cost \$55,000.

Foundry and Machine Plants

Ala., Birmingham—Lamson-Sessions Bolt Co., 1971 W. Eighty-fifth St., Cleveland, O., and 3103 Twenty-seventh Ave., North Birmingham, reported, let contract to Johnson Construction Co., 512 N. Sixth St., for 1-story addition, 60x180 ft., for storage and distribution.

N. C., Statesville—Turner Mfg. Co. chartered; D. A. Matthews, R. S. Dickson; manufacture farm implements.

Okla., Tulsa—Howard N. Hansen Co., Mideo Bldg., reported, plans building or leasing plant for manufacture patented oil field production specialties.

Tex., Dallas—John E. Mitchell Co., 3800 Commerce St., reported, erect second story addition to cotton gin machinery plant.

Tex., San Jose—International Machinery Co., capital \$25,000, chartered; John Tancred, Jr., 117 Norwood St., San Antonio.

Va., Lynchburg—Better Products Machinery Co., Inc., chartered; John B. Winfree, Jr., 1007 Federal St.; manufacture mechanical devices.

Garages and Filling Stations

Ala., Birmingham—Shell Petroleum Corp., E. O. Fields, Constr. Supt., Martin Bldg., reported, let contract to S. S. Jacobs, Hilbrandt Bldg., Jacksonville, Fla., for filling station Ave. G and 21st St. 7-31

Ala., Gadsden—W. H. Mayben, reported, has contract for garage and show room for C. A. East, Rock Springs. 6-26

Ark., Harrison—Transcontinental Oil Co., Thompson Bldg., Tulsa, Okla., reported, construct station on N. Vine St.

Ark., Little Rock—Lion Oil Sales Co., formed by T. H. Barton and associates as subsidiary of Lion Oil Refining Co., El Dorado; will acquire service stations in various parts of country.

Ark., Pine Bluff—Texas Co., 720 San Jacinto St., Houston, Tex., reported, construct service station Fourteenth and Main Sts.

Ark., Pine Bluff—H. C. Couch, Simmons Bldg., will let contract Aug. 18 for filling station Fifth and State Sts. to be occupied by Firestone Tire & Rubber Co., Akron, O., H. O. Hinton, Local Rep.; Lynn V. Spink, Company Constr. Engr.; 1 story; brick; 50x150 ft.; also construct two 10,000 gal. capacity tanks and pipe line to spur track between Fourth and Fifth Aves.; Firestone company will install own equipment to include gasoline pumps, brake testers, etc.

Fla., Jacksonville—Aeme Auto Co., incorporated; J. D. Kinnett, 2518 Riverside Ave.

Fla., Jacksonville—F. V. Oliver Motor Co., chartered; F. V. Oliver, 3435 Ortega Blvd.

Fla., Manatee, Ind. Branch Bradenton—F. K. Webb, First Natl. Bank Bldg., Bradenton, preparing plans for service station southwest corner Manatee and Central Aves. for Seaboard Oil Co., Lynch Bldg., Jacksonville; brick and tile; soon call for bids.

Fla., Palmetto—Seaboard Oil Co., Lynch Bldg., Jacksonville, reports, having plans prepared by F. K. Webb, First Natl. Bank Bldg., Bradenton, and associates for deluxe service station southeast corner Lemon Ave. and Elm Sts., Palmetto; brick and steel; soon call for bids.

Fla., St. Petersburg—John S. Williams, erect garage rear of 253 First Ave., N.; fireproof; conc. block; J. A. Ingram, Archt.; Julius Johnson, Cont., 4800 Third Ave., S.

Ga., Savannah—Boyd Tire Co., 112 Drayton St., leased and will remodel building, Drayton, McDonough and Hull Sts., for service station.

Ky., Lexington—Standard Oil Co., Cox and Manchester Sts., erect service station southeast corner Main St. and south Eastern Ave.

La., Alexandria—Shell Petroleum Corp., Xalres St., erect service station at Third and Fulton Sts.; also plans erection of additional stations.

Md., Baltimore—Consolidated Gas. Electric Light & Power Co., Lexington Bldg., started work on 3 story rein. conc. addition to garage at Monument and Forrest Sts.; irregular shape, 72 ft. on Front St., 229 ft. on Forrest St.; private plans; owner builds; cost \$95,000.

Md., Baltimore—Dietrich Brothers, 220 Pleasant St., has contract for 350 tons structural steel and 150 tons rein. steel for garage for U. S. P. O. 439-457 E. Preston St. 8-7

Miss., Meridian—W. H. Vincent, 1817 33rd Ave., reported, let contract to Knowles & Cunningham, for filling station.

Mo., Joplin—Home Oil Co., reported, acquired Cook Motor Service Co., N. E. Cor. Fifth and Wall Sts.

Mo., Kansas City—Goodrich Silvertown, Inc., division of B. F. Goodrich Rubber Co., Akron, O., reported, plans sales and service station, 3746 S. Broadway.

Mo., Kansas City—Scarritt Estate Co., Scarritt Bldg., will erect building, 2534 McGee Trafficway, to be occupied by Kansas City branch of Eaton Bumper & Spring Service Co., 1601 Oak St.

Mo., Kansas City—Skelly Oil Co., 2534 Madison St., construct filling station northwest corner Thirty-ninth St. and Warwick Blvd.

Mo., Kansas City—Marty H. Raming, 3847 Wabash St., reported, erect filling station 2500 E. Thirty-ninth St.

Mo., Sedalia—Skelly Oil Co., 1200 W. Main St., reported, erect filling station on Fifth and Osage Sts.

Mo., St. Louis—Chase DeLuxe Auto Livery Co., Inc., chartered; James A. Ryan, Arcade Bldg.

Mo., St. Louis—Pevely Dairy Co., Grand and Chouteau Sts., reported, let contract to Fruin-Colnon Contg. Co., 501 Merchants Laclede Bldg., for garage, LaSalle St. west of Motard Ave.; 1 story, brick and conc., 134x300 ft.

Mo., St. Louis—Phillips Petroleum Co., Bartlesville, Okla., and 2622 Hamilton Ave., reported, let contract to Moss Const. Co., 1218 Olive St., for filling station, 2622 Hamilton Ave.; 1 story, brick.

N. C., Charlotte—Fleming Tire & Vulcanizing Co., capital \$50,000, incorporated; T. J. Fleming, 2517 E. Fifth St.

Okla., Oklahoma City—Ray Neel Service Co., Inc., capital \$15,000, chartered; Ray Neel, 700 N. Hudson St.

Okla., Oklahoma City—Peltier & Fitzgibbons have contract for garage on W. Seventh St. for Mary Bachel; brick, rein. conc.; cost \$15,000.

S. C., Anderson—Anderson Petroleum Co., Frank R. Thompson, Pres., Glenn St., erect gasoline and service station N. E. Cor. W. Market and Peoples Sts.

Tenn., Memphis—Producers & Refinery Corp., 633 N. Front St., reported, let contract to Koehle Bros., 1215 Dorothy St., for filling station Mississippi and Triggs Ave.

Tenn., Memphis—Cash Oil Co., Bankers Trust Bldg., Little Rock, Ark., reported, let contract to H. H. Walsh, Medical Arts Bldg., for filling station; brick veneer; 1 story; comp. roof.

Tenn., Memphis—L. L. Diehl, 1663 Forrest Ave., has contract for garage Watkins St. for Joe T. Wallace, Bank of Commerce Bldg. 8-14

Tex., Cotulla—Mitchell Construction Co., Builders Exchange Bldg., San Antonio, has contract for gasoline station, 1 story, brick, rein. conc., for Humble Oil & Refining Co., Humble Bldg., Houston. 8-7

Tex., Fort Worth—Thomas S. Myrre, Inc., Fort Worth Natl. Bank Bldg., has contract for garage building, First and Throckmorton Sts., for Leonard Bros., 111 N. Houston St.; Wyatt C. Hedrick, Inc., Archt., First Natl. Bank Bldg.

Tex., Harlingen—Firestone Tire & Rubber Co., Akron, O., reported, erect building Commerce and Harrison Sts.

Tex., Harlingen—Humble Oil & Refining Co., Houston, reported, plans \$20,000 filling station Harrison and First Sts.

Tex., Mercedes—The Texas Co., let contract to Jacob Fessler, Mercedes, for frame and stucco service building Missouri and Second Sts.; install 4 gasoline pumps; air station; air compressors; 5 tube oil container; etc. 8-14

Tex., Perryton—T-W Motor Co. chartered; L. M. Timmons, R. S. Medley.

Tex., San Antonio—Humble Oil & Refining Co., P. A. Watts, Ch. Engr., Humble Bldg., Houston, erect 1 story, brick and rein. conc. filling station Broadway and Ira Sts.; bids opened Aug. 22. 8-7

Va., Staunton—Community Service Co., chartered; S. Glenn Cline.

W. Va., Lumberport—J. N. Coltrane erecting 2 story, brick and wood garage; 44x66 ft. ft. will be occupied by Cunningham Brothers Garage.

Gas and Oil Enterprises

Ark., DeQueen—City, reported, granted gas franchise to Public Utilities Corp. of America, subsidiary of Cities Service Co., 60 Wall St., New York; gas supply to be brought from Okay, 13 miles.

Florida—General Gas & Electric Corp., 50 Pine St., New York, reported, acquired gas properties in Sanford, Deland and Orange City, Fla., Florence and Darlington, S. C.

Fla., Miami—Miami Oil Refining Co., chartered E. Hainlin, 635 N. W. 44th St.

Kentucky—Northern Gas Co., Mount Vernon, O., reported, applied for permit from U. S. Office, Huntington, W. Va., to install four 10-in. gas pipe lines in Levisa Fork of Big Sandy River at Alonzo.

Kentucky—Central Indiana Gas Co., subsidiary of Central Public Service Corp., Chicago, Ill., reported, plans construction of 18-in. welded steel pipe line to extend 260 miles from natural gas fields in eastern Kentucky to territory served by company; cost of line, \$12,000,000; company is parent organization of Ohio Valley Electric Railway Co., operating public utilities in Ashland, Ky., Portsmouth, Ohio, etc.

Ky., Hopkinsville—Specification Motor Oil Co., chartered; John W. Haynes, W. R. Wheeler.

Louisiana—Following cities and towns have granted franchises to distribute natural gas to Moody-Seagraves Gas Co., Inc., Esplanade Bldg., Houston, Tex.; DeQuincy, Lake Charles, Crowley, Jennings, Kinder, Lafayette, Oberlin, Rayne, Sulphur, Welsh, West Lake, Broussard, Church Point, Deridder, Elizabeth, Elton, Glenmora, Ludington, Oakdale, St. Martinville, Vinton, Youngsville, Abbeville, Breaux Bridge, Bunkie, Cheneyville, Erath, Eunice, Franklin, Jeanerette, LaCompte, Milton, New Iberia, Opelousas, Washington, Cottonport, Leesville, Longbridge, Mansura, Marks, Merryville and Ville Platte; project involves capital expenditure of \$6,124,038; comprises main lines, 62 miles of 16-in. pipe, 18-14 in. 27-12-in., 60 of 6-in., and 7 of 4-in.; all cities will be piped for distribution, except Lafayette and Lake Charles now using artificial gas; company will complete and distribute gas within one yr. from acceptance of franchise. 8-14

La., Reserve—Reserve Public Utilities, J. P. Greven, reported, will acquire natural gas distribution franchise granted to C. I. James.

La., Shreveport—Julius Royalty Co., Inc., chartered; Fred E. Hamiter, Giddens-Lane Bldg.

La., Shreveport—Louisiana-Van Oil Co., Inc., chartered; J. J. Lyons, Ricou-Brewster Bldg.

La., Sulphur—Union Sulphur Co., 33 Recter St., New York, reported, has option on 450 acres at Rose Bluff for tank farm with possible erection of cracking plant for extracting gasoline from crude petroleum; erect docks, etc.

Miss., Bay St. Louis—City votes Sept. 16 on granting natural gas franchise. 7-17

Miss., Indianola—Mississippi Gas & Electric Co., Jackson, reported, granted gas franchise. 7-31

Mo., Laddonia—City votes Sept. 3 on granting gas franchise to Missouri Power & Light Co., Jefferson City.

Mo., Sedalia—City Light and Traction Co., applied to Public Service Coman., Jefferson City, for permission to supply natural gas instead of artificial; gas to be procured from Cities Service Gas Co., 60 Wall St., New York, delivered at north border of city limits and piped by City Light and Traction Co. into city.

Mo., Springfield—City votes Aug. 26 on granting 20 yr. natural gas franchise to Springfield Gas & Electric Co.

Mo., Tipton—Thomas F. Bowdern, 729 N. Union St., St. Louis, reported, granted natural gas franchise; will organize company.

Oklahoma—Sheehan Pipe Line Construction Co., Exchange Bank Bldg., Tulsa, reported, has contract for building first 2 units of gasoline pipe line from Oklahoma to Chicago for Great Lakes Pipe Line Co., subsidiary of Barnsdall Corp., Petroleum Bldg., Tulsa, and Continental Oil Co., Ponca City; a 55-mile line of 6-in. pipe will be laid from Continental Oil Co.'s refinery at Ponca City to Barnsdall and a 240-mile line of 8-in. pipe from Barnsdall to Kansas City, Mo.; Sheehan Pipe Line Construction Co. also will submit bids to be opened Sept. 1 for construction 215-mile line from Kansas City to Des Moines, 265-mile artery from Des Moines to Minneapolis-St. Paul and for a 315-mile line from Des Moines to Chicago; Omaha section, units to Okmulgee and other branches will be let later. 7-24

Oklahoma—Stockholders of Sinclair Consolidated Oil Corp., 45 Nassau St., New York, vote Sept. 17 on sale of Sinclair's half interest in Sinclair Pipe Line Co., and Sinclair Crude Oil Purchasing Co., to Standard Oil Co. of Indiana; also vote on proposal approved by directors to authorize new issue of 5,000,000 shares of preferred stock to be used for expansion plans, refunding bond issues and retiring present 8% preferred.

Oklahoma—Freeborn & Lambert, Tulsa, reported, construct natural gas pipe line, Hartshorn to Blocker and distribution system in Hartshorn; expend \$50,000.

Okla., Ardmore—Wirt Franklin Petroleum Corp., will occupy building West Main, now under construction; cost \$50,000.

Okla., Canute—L. B. Clayton, Will, Okla., has franchise for gas distribution system.

Okla., El Reno—City, reported, deferred action on granting gas franchise to S. R. Morgan & Co., Chicago, Ill. 8-7

Okla., Oklahoma City—C. W. Stuck Petroleum Co., capital \$75,000, chartered; E. H. Price, 1128 W. Delaney St.

Okla., Tulsa—Champlain Refining Co., Enid, reported, started construction of 45 miles of 8-in. pipe line to Oklahoma City field.

Okla., Tuttle—City, J. W. Reinger, Mayor, reported, plans natural gas system and supply line from city to gas field; expend \$30,000.

S. C., Bishopville—Bishopville Petroleum Co., chartered; J. William White, W. T. Des Champs.

S. C., Chester—Southern Public Utilities Co., 426 S. Church St., Charlotte, N. C., reported, granted gas franchise; erect \$100,000 gas plant. 8-7

Tenn., Memphis—Standard Oil Co. of Louisiana, 1211 Union St., reported, erect \$100,000 addition to barge line storage plant at Wisconsin Ave. and Riverside; three steel tanks, 95 ft. in diam. 42 ft. high and tank 60 ft. in diam. and 35 ft. high. 8-14

Texas—United Gas Co., 1601 Commerce St., Houston, reported, begin immediate construction of trunk gas pipe line from Refugio County field to Bee County fields to connect with lines into San Antonio; line will extend from Refugio northwest to Pettus field in Bee County, where it will traverse Ray oil and gas properties; from there it will run north of Pettus, 16-in. line will be built to connect with Moody-Seagraves gas line; another line will extend west from Pettus to connect with north and south trunk line.

Tex., Beaumont—Warton County Oil & Gas Co., chartered; J. D. McCall, San Jacinto Life Bldg.

Tex., Coleman—Iowa Payne Oil Co., capital \$100,000, chartered; Bryan W. Payne, K. C. Mowery.

Tex., Dallas—Van-Tex Oil Corp., chartered; L. B. Pruitt, Burt Bldg.

Tex., Galveston—Long Island Petroleum Co., capital \$25,000, chartered; Adrian F. Levy, U. S. Natl. Bank Bldg.

Tex., Fort Worth—Leo Petroleum Co., chartered; W. J. Ochiltree, 2701 University St.

Tex., Fort Worth—Eighty Oil and Gas Co., capital \$15,000, incorporated; M. K. Swanson, Worth Hotel.

Tex., Fort Worth—Rainbow Oil & Gas Co., capital \$24,000, incorporated; M. K. Swanson, Worth Hotel.

Tex., Harlingen—Los Olmos Oil & Gas Co., capital \$40,000, chartered; C. L. McCurry, J. W. Richards.

Tex., Huntsville—Moody-Seagraves Co., Esperson Bldg., Houston, Tex., reported, has natural gas franchise; pipe gas from Palestine, via Elkhart, Grapeland, Crockett, Lovelady, Groveton, Trinity, Riverside and Huntsville.

Tex., Houston—Brown-Stone Oil Corp., chartered; Dave Harrell, Jr., 3519 Travis St.

Tex., Houston—Magnolia Airco Gas Products Co., incorporated; Thomas S. Tallafarro, First Natl. Bank Bldg.

Tex., Luling—Long & Rabon Drilling Co., chartered; Sam H. Rabon, Frank M. Long.

Tex., Luling—Inter-Continent Petroleum Corp., chartered; Joseph Brunner, Walter O. Slater.

Tex., San Antonio—Gatlin Oil Co. incorporated; E. S. Bridge, Texas Theater Bldg.

Tex., Texarkana—Citizens Oil & Gas Co., chartered; L. S. Kennedy, J. E. Yates.

Tex., Tyler—Reuter Lake Oil Corp., chartered; Douglas Hoybook, N. M. Shank.

Tex., Wichita Falls—Panhandle Development Co., capital \$75,000, chartered; W. D. Brookover, 1615 Tilden St.

Tex., Wichita Falls—Southwestern Royalty Co., capital \$25,000, chartered; Henry Hobbs, Hamilton Bldg.

Ice and Cold-Storage Plants

Ark., Malvern—Southern Ice & Utilities Co., Second and Byrd Sts., Little Rock, acquired site, Main and Dyer Sts.; erect ice plant; cost \$40,000. 6-26

Ga., Waycross—A. M. and Charles T. Dixon, reported, acquired Service Ice and Storage Co., Albany Ave. and Nichols St.; plans improvements.

S. C., Charleston—Your Ice Co., John D. How, Pres., 104 Spring St., erect ice plant Line St.

Land Development

Ark., Garland—Edward Hudson, 3908 Capitol St., Dallas, Tex., reported, develop 40 acre subdivision; R. V. Hall, Engr., Texarkana, surveying site.

Fla., Bradenton—R. C. Duffie, Inc., chartered; D. A. Dye, 464 12th St.

Fla., Bradenton—Z. H. Roughton, Inc., chartered; Z. H. Roughton, C. L. Pope.

Fla., Dade City—Lynn Corp., incorporated; D. M. and J. K. Hendley.

Fla., Miami—General Citrus Fruit Corp., incorporated; J. C. Pereno, Congress Bldg.

Maryland—Maryland and National Capital Park and Planning Comsn., Washington, D. C., and Hyattsville, reported, plans developing park in Prince Georges County, Md., in Anacostia-Northwest Branch region from Peace Cross in Bladensburg to Queen's Chapel Rd.; plans include establishment of parkways in area of 200 acres; Irving C. Root, Ch. Engr.

Md., Hagerstown—Dixie Golf Course, Inc., chartered; Charles W. Earley, Kenneth Williams.

Mo., Kansas City—Midland Florists, Inc., chartered; Nugent J. Flynn, Baltimore Hotel.

Mo., Kansas City—Eleventh & Wyandotte Realty Co., chartered; H. C. Edwards, New York Life Bldg.

Mo., Kansas City—Advance Properties, Inc., capital \$40,000, chartered; E. J. Willett, Uptown Bldg.

Mo., St. Louis—Weinberg & Weinberg Realty Co., capital \$30,000, incorporated; Joseph Weinberg, 4519A Flora Ave.

N. C., Statesville—Statesville Golf Co., capital \$100,000, incorporated; J. B. Cooper, E. R. Rankin.

Tex., Denison—Texhoma Pecan Growers Co-operative Assn., chartered; J. E. Meador, C. A. Moore.

Tex., Eagle Pass—See Airports, Airplane Plants, etc.

Tex., Houston—White Oak Corp., capital \$50,000, incorporated; C. V. Jarrell, Public Natl. Bank Bldg.

Tex., Houston—River Oaks Corp., River Oaks Bldg., acquired 32 acres adjacent to present subdivision.

Va., Bedford—Bedford Burial Park Corp., capital \$50,000, incorporated; W. G. Baldwin.

Va., Richmond—Woodland Lake, Inc., capital \$25,000, chartered; J. W. Chambers, 711 N. Boulevard.

Va., Winchester—E. W. J. Hearty Virginia, Inc., capital \$25,000, chartered; F. Earl Parsons.

Lumber Enterprises

N. C., Cleveland—Cleveland Veneer Co., capital \$50,000, chartered; W. F. Thompson, R. N. Moore.

N. C., Hendersonville—Avon Lumber Co., Inc., capital \$125,000, chartered; O. W. Thomason, L. B. Prince.

N. C., Statesville—Pioneer Realty Corp., chartered; E. E. Reed, C. B. Spencer.

Tenn., Memphis—Turner Lumber Co., incorporated; F. T. Turner, 14 S. McLean St.

Tex., Houston—Tylor Lumber Co., 312 Smith St., reported, acquired properties of McGranahan Lumber Co. at 401 Hill St.; leased site for 10 yrs.

Va., Norfolk—Muddleston Mahogany Co., S. Norfolk, reported plans \$100,000 lumber mill.

Mining

Okla., Miami—Lucky Jayhawk Mining Co., capital \$24,000, chartered; M. G. West, R. J. Tuthill.

Tex., Denton—Tres Cuevas Quicksilver Co., capital \$12,000, incorporated; C. L. Oliver, C. H. Hancock.

Tex., The Grove—Will Mathney, Waco, and C. Williams, reported, leased 500 acres; develop stone quarry.

Miscellaneous Construction

Alabama—See Roads, Streets, Paving.

Ala., Mobile—Following have sub-contracts in connection with \$160,000 transit shed of Alabama State Docks Comsn.: Rein. steel, Ole K. Olsen, 325 N. Cortez St., New Orleans, La.; corrugated roofing and siding, Tennessee Coal, Iron & Railroad Co., Brown-Marx Bldg., Birmingham; cement, Underwood Coal & Supply Co.; sheet metal work, Security Roofing Co., both foot of Madison St.; sand and gravel, Radcliffe Bros., foot of Palmetto St., all Mobile; O. M. Gwin Construction Co., Gen. Contr., 3503 Fern St., New Orleans, La. 8-14

Ky., Elizabethtown—Fill—See Bridges, Culverts, Viaducts.

La., Shreveport—Caddo Parish Levee Bd. approved plans for 2 mi. levee, 250,000 cu. yd. earthwork, 15 ft. high, est. cost \$60,000.

Miss., Kosciusko—Attala County Bd. of Supvrs. let contract to Allen Bros. for levee on Hurricane Creek.

Missouri—U. S. Engr. Office, Customhouse, St. Louis, let contract to Woods Bros. Construction Co., Lincoln, Neb., at \$66,320, for 4000 lin. ft. timber crib dikes, Slim Island. 7-24

Miss., Columbus—Fills—See Bridges, Culverts, Viaducts.

Mo., Cambridge—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, opens bids Aug. 27 for constructing about 21,460 lin. ft. pile clump dikes and 4800 lin. ft. standard revetment, Missouri, Wilhoite Bend here.

Mo., Mount Pleasant, St. Louis—U. S. Engr. Office, McCall Bldg., Memphis, Tenn., let contract to Lowrance Bros. & Co., Driver, Ark., at \$115,645, for 505,000 cu. yd. earth for main line levee near Mt. Pleasant.

Tenn., Memphis—U. S. Engr. Office, McCall Bldg., let following contracts for 5,873,000 cu. yd. levee work, Mississippi River: H. E. Culbertson Co., Union Trust Bldg., Cleveland, Ohio, at 24.34 cents per cu. yd., for Items 29a to 29d; McWilliams Dredging Co., 75 E. Wacker St., Chicago, at 17.75 cents per cu. yd., for Item 21. 5-29

Tex., Beaumont—Port Comsn., J. Russell Walt, Port Director, has low bid from King-Huff Construction Co., 561 Franklin St., at \$25,686, for 2 warehouses; No. 3 1/2, 70x283 ft.; No. 5 1/2, 80x200 ft. 8-14

Tex., Corpus Christi—Rae A. Easley granted franchise by City to construct boardwalk on North breakwater, wharves, piers and developing yacht basin and boat storage facilities.

W. Va., Point Pleasant—V. C. Pettit, Kanawha Bank & Trust Bldg., Charleston, completed plans and specifications for granite base to complete battle monument; cost \$20,000; on walls of base will be 20 bronze tablets 40x24 in. and 48x18 in.

Miscellaneous Enterprises

Ala., Anniston—Alabama Coca Cola Bottling Co. receives bids Aug. 27 (change of date) at office of Pringle & Smith, Archts., Norris Bldg., Atlanta, Ga., for bottling plant, cost \$75,000; 2-story and basement and garage building, 130x71 ft.; rein. conc. construction; brick and tile walls; Indiana limestone and terra cotta trim; tile and comp. roof; contractors estimating: The Flagler Co., Red Rock Bldg., A. K. Adams & Co., 542 Plum St., N. W., Southern Ferro Concrete Co., Atlanta Trust Bldg., all Atlanta, Ga.; Ogletree Constr. Co., 11th St., and Duke, Sticksney Constr. Co., Liles Bldg., both Anniston; Foster & Creighton Co. and Day & Sachs, 2400 Fifth Ave., S., both Birmingham, Ala. 8-14

Ala., Birmingham—Birmingham Electric Battery Co., 2230 Second Ave., reported, let contract to J. I. Borkiss, Comer Bldg., for addition Ave. B. and Second Ave. 6-19

Fla., Jacksonville—Hamilton Turpentine Co., Inc., chartered; A. L. Powell, 3405 Riverside Ave.

Fla., Lakeland—Commercial Press, Inc., chartered; G. H. Cole, E. E. McDaniel.

Fla., Miami—Spruill-Cordon Paint Works, Inc., chartered; W. E. Spruill, 301 N. E. 61st St.

Fla., Pensacola—Superior Baking Co., Candler Bldg., Atlanta, Ga., acquired and will improve plant of Hughey's Bakery, 29 E. Garden St.; install new equipment. 8-14

Fla., St. Petersburg—Stebbins Construction Co. incorporated; A. A. Stebbins, 2821 First Ave., N.

Fla., St. Petersburg—Southern Press, Inc., chartered; A. H. White, 2411 Central Ave.

Fla., Tampa—Tampa Contractors, Inc., chartered; E. V. Shaw, 216 Shore Court Drive.

Ga., Atlanta—G. H. Butler, Glenn Bldg., reported, low bidder for additions and alterations to building 127 Ellis St., for Foremost Dairies, brick walls, conc. footings; built-up roof.

Ga., Atlanta—Fox Film Corp., 850 Tenth Ave., New York, reported, leased 2 story film exchange building to be erected corner Walton and Cain Sts. by the Oldknow Realty Co., 187 Walton St., N. W.

Ga., Columbus—Williams Lumber Co., 13th St., reported, has contract for building for Columbus Ledger-Enquirer Sun, R. W. Page Corp., Owners; 2 story and basement; L shaped; 120x150 ft.; steel frame; rein. conc. foundations; brick walls; Smith & Biggers, Archts., Murtha Bldg. 8-7

Ga., Savannah—Best Laundry Co., 411 E. Bay St., chartered; Charles A. Lebey.

La., New Orleans—Winter Capital Amusement Co., capital \$15,000, incorporated; L. A. Webb, 4807 Magazine St.

La., New Orleans—Reinmann Construction Co., Maritime Bldg., has contract for newspaper storage building for States Daily Publishing Co., Ltd., 900 Camp St.; struc. steel and corrugated asbestos; 50x200 ft.; 1 story, conc. floors, asbestos roof; cost \$15,000; Sam Stone, Jr., & Co., Archts., Masonic Temple Bldg. 7-31

La., New Orleans—Radio-Kelth-Orpheum Corp., receiving bids at office Theard & Matthews, Balter Bldg., for construction of proposed 2 story; 32x110 ft. fireproof film exchange building Cleveland Ave. near Liberty St.; bids opened Aug. 25; following contractors estimating: Reilly-Ruckstuhl, Inc., 423 Carondelet St.; H. A. Pallfelt, Balter Bldg.; Gervais F. Favrot, Balter Bldg.; Lionel F. Favrot, Louisiana Bldg.; Albert W. Drennan, 2245 Carondelet St.; Wm. H. Dudley, Jr., Stern Bldg.; L. Delarosa, 616 Poydras St.; J. A. Petty & Sons, Inc., Godechaux Bldg.; J. V. & R. T. Burkes, Inc., American Bank Bldg.; Geary-Oakes Co., Queen & Crescent Bldg. 7-10

Md., Baltimore—Afro-American, Carl Murphy, Pres., 628 N. Eutaw St., erect 2-story brick addition; plans and construction by Tase-Norris, Inc., 903 Cathedral St.; cost \$10,000.

Md., Darlington—Following are bidders on farm structures for Indian Spring Farm, W. S. Austin, Conslt. Engr., Maryland Trust Bldg., Baltimore: C. A. McCommons, Havre de Grace; H. F. Callahan, Centerville; William H. Towson; Allen F. Feaser, Taneytown; E. W. Schoelkopf, Phoenix; Bailey & Coale, Bel Air; Milton C. Davis, Inc., 902 W. Thirty-sixth St., Tase-Norris, Inc., 903 Cathedral St., North Eastern Construction Co., 6 W. Madison St., C. W. Schmidt, Hearst Tower Bldg., and J. George Bensen Co., 3005 Shannon Drive, all Baltimore. 8-7

Md., Chesapeake Beach—Chesapeake Beach Railway Co., L. H. Landis, Gen. Mgr., Barr Bldg., Washington, D. C., reported, received permission from Interstate Commerce Com'n., Washington, for operation ferry service across Chesapeake Beach to Trippe's Bay on Eastern Shore; company reported, expend \$1,085,000 on construction of vessels and erection of terminals; Wm. V. Hodges, trustee in control of railroad's securities arranged financing. 2-13

Md., St. Helena, Baltimore—Price Construction Co., Maryland Trust Bldg., has contract at \$35,000 for 1 and 2 story factory buildings for Chemical & Pigments Co., Inc., St. Helena. 7-31

Miss., Ackerman—Ackerman Creamery acquired site on Federal Aid Highway, No. 12; erect creamery; yearly output 450,000 lbs. butter.

Mo., Boonville—F. L. Stee*rod and Paul B. Whalton, Excelsior Springs, reported, acquired Boonville Daily News and Boonville Advertiser.

Mo., Independence—Land O'Promise Hatchery & Poultry Co., Inc., capital \$100,000, chartered; I. A. Smith, 1214 W. Short St.

Mo., Joplin—Ozark Stockyards Co., capital \$100,000, incorporated; Milo L. Margenau, 123 Connor St., interested; erect stockyards, central office building, etc.

Mo., Kansas City—Country Club Cleaners & Dyers, Inc., chartered; Joseph J. Goetz, 7 E. 71st St.

Mo., Kansas City—Phenix Box & Label Co., Wright-Smoke Bldg., reported, plans 1 story, basement factory; 100x108 ft.; brick; cost \$40,000.

Mo., St. Joseph—Oscar H. Schmidt, Inc., chartered; Oscar H. Schmidt, 112 N. Ninth St.; construct culverts, sewers, etc.

Mo., St. Louis—Southern Equipment Co., 5024 S. 38th St., increased capital to \$60,000; manufacture kitchen equipment.

Mo., St. Louis—Hollywood Frocks, Inc., chartered; Joseph Zerman, 5890 Cates St.; manufacture dresses.

Mo., St. Louis—Papendick Bakery Co., 3500 N. Florissant St., reported, let contract to Acme Construction Co., Rwy. Exch. Bldg., for bakery addition 3500 Florissant Ave.; 1 story and part basement; struc. steel and rein. conc.; 150x156 ft.; W. E. Long Co., 155 N. Ozark St., Chicago, Ill., Archt.

Mo., St. Louis—McKelvey-Felix Construction Co., chartered; James N. McKelvey, 722 Chestnut St.

Mo., St. Louis—Air Reduction Co., 115 Plum St., reported, acquired Superior Acetylene Co., Inc., Kingshighway and Connecticut St.

Mo., St. Louis—Contract Waterproofing Co., chartered; Henry C. Morrison, 21 Windermere St.

Mo., St. Louis—Honey Boy Co., Inc., 216 S. Seventh St., capital \$30,000, incorporated; F. J. Geier, Monticello Apt.; manufacture confections.

Mo., St. Louis—St. Louis Post-Dispatch erect auxiliary printing plant on south side of Duncan Ave., west of Boyle St.; 3 story; cost \$500,000.

Mo., St. Louis—St. Louis Star erect building above subway freight terminal at High and Morgan Sts.

N. C., Greensboro—Southern Life and Accident Insurance Co., capital \$100,000, chartered; J. S. Duncan, Jefferson Bldg.

N. C., Greensboro—C. B. Clegg Co., 601 Fulton St., capital \$100,000, chartered; J. F. Sweeney, 1229 Asheboro St.; manufacture conc. products.

N. C., New Bern—Cloverleaf Farms, Inc., chartered; R. E. Whitehurst, 23 Pollock St.

N. C., Winston-Salem—DeLuxe Cleaners, chartered; W. S. Shepherd, Sr., 703 Boulevard.

N. C., Winston-Salem—Brown & Williamson plant of Bristol-American Tobacco Co., 902 Oak St., plans immediate construction of conc. and steel loading platform, 175 ft. long and 12 ft. wide extending length of manufacturing plant at top of retaining wall 10 ft. high; steel tower for operation of freight elevator also planned; work is being done in connection with building of underpass for Southern Ry.

N. C., Winston-Salem—R. J. Reynolds Tobacco Co., reported, erect \$45,000 power plant extension; Fourth St. and Patterson Ave.; 56x80 ft., 2 story, conc. and steel; J. E. Strine & Co., Archts., 215 S. Main St., Greenville, S. C.

N. C., Charlotte—Charlotte Packing and Refining Co., capital \$25,000, chartered; Edward Wolf, Charlotte; George W. Parr, Lancaster, S. C.

Okla., Bartlesville—Bart Products Co., F. E. Fisher, Gen. Mgr., reported, plans addition for grinding dept. and machine shop expansion.

Okla., Oklahoma City—Butt's Electric Works, E. A. Butt, Pres., 509 W. Second St., reported, erect machine shop at 101 N. Pennsylvania Ave.

Okla., Oklahoma City—Harry Reynolds, 915 N. Hudson St., reported, begin work on \$18,000 oxygen plant for Burdett Oxygen Co., 510 N. Hudson St.; 1 story, brick, 50x70 ft.

Okla., Oklahoma City—Oklahoma Operating Co., 304 W. First St., reported, let contract to R. H. Dobbins Construction Co., 513 N. Indiana St., Oklahoma City, for dry cleaning plant; Walter Vahlberg, Archt.

Okla., Tecumseh—Democrat Printing Co. incorporated; M. J. Newell, H. M. Henderson. S. C., Columbia—Ida R. and Perlstein H. Coughman erect 2-story brick creamery, 103 Main St.; cost \$30,000.

S. C., Charleston—Technicraft Co., F. G. Boggs, Pres., 6 Gibbs St., manufacture educational construction sets.

S. C., Spartanburg—C. W. Bartleson, Jr., acquired Spartanburg properties of Stewart Brothers Paint Co., Exchange St.; will operate as Stewart-Bartleson Co.; improve plant; install additional machinery.

Tenn., Chattanooga—Linde Air Products Co. and Prest-O-Lite Co., Inc., subsidiaries of Union Carbide & Carbide Corp., ad 30 E. 42nd St., New York, reported, soon start work on erection of 2 plants, cost \$500,000, at Twenty-third St. and Central of Georgia Railway crossing; brick and rein. conc. 4-10

Tenn., Memphis—Polar Bear Co., Inc., capital \$25,000, chartered; John L. Exby, 352 Angelus St.

Tenn., Memphis—Iten Biscuit Co., Omaha, Neb., E. E. Robinson, 1075 Florida St., reported, construct addition to plant.

Tenn., Memphis—The Upjohn Co., Kalamazoo, Mich., has plans in progress by Hanker & Cairne, Archt., Court Square Bldg., for \$30,000 chemical plant Front and Pontotoc Sts.; rein. flat slab, brick curtain walls; 1 story and basement, 50x170 ft. See Want Section—Building Materials and Equipment. 7-31

Tenn., Memphis—J. B. Stern, 317 Washington Ave., Montgomery, Ala., reported, acquired Memphis Weekly Commercial Appeal; will consolidate Weekly with Southern Farmer, published at Montgomery, Ala.

Tenn., Union City—Union Dairy Co. remodel plant, install additional equipment.

Texas—Air Reduction Co., 342 Madison Ave., New York, reported, incorporated in Texas wholly owned subsidiary, Magnolia Alreo Gas Products Co., latter company having acquired assets and business of Magnolia Gas Products Co., with oxygen plants at Houston, Beaumont and San Antonio and acetylene plant at Houston.

Texas, Beaumont—Cummer Mfg. Co. of Texas, Paris, reported, acquired Beaumont Box Factory, 1695 Cedar St.; increased capital \$140,000 to \$400,000.

Texas, Dallas—Traffic Surveys & Equipment Co., Adolphus Hotel, formed by Robert W. Foster, E. C. Vickers and associates to handle several lines of traffic products and in-cinerator for municipal use; will operate in South in Missouri, Arkansas, Texas, Oklahoma, Louisiana and Tennessee.

Texas, Houston—J. B. Dannenbaum, Inc., capital \$15,000, chartered; J. B. Dannenbaum, Bankers Mortgage Bldg.; construction and repair.

Texas, Jacksonville—Tilley Laundry Co., capital \$25,000, incorporated; E. F. Tilley, Perry Wallace.

Texas, Littlefield—J. C. Hillburn, reported, interested in erection of co-operative creamery.

Texas, San Antonio—American Bonded Warehouse Co., Inc., chartered; L. P. Ruedrich, 719 St. James St.

Texas, Victoria—Victoria Milk Products Co., Rubin Freis, Pres., acquired McElroy plant; improve, increase facilities for pasteurizing milk and equipment for manufacture ice cream. 8-7

Texas, Waco—Crawford-Austin Mfg. Co., Inc., Third and Jackson Sts., manufacturers of tents, tarpaulins, etc., advises that burned building has been repaired and company is now in normal production. 8-7

Texas, Wichita Falls—Mity Nice Bakery Co., capital \$30,000, chartered; J. L. Russell, B. C. Copeland.

Va., Big Stone Gap—Meade Fibre Co., Dayton, Ohio, reported, investigating water supply and present extract plant of United States Leather Co., under option to company; has under consideration establishment of paper mill.

Va., Bluefield—Virginia Maple Syrup Corp., capital \$25,000, incorporated; A. Walk, 215 Fairfax St., Bluefield, W. Va.

Va., Floyd—Irving Freezer of J. Freezer & Sons, 1214 Broadway, New York, reported, interested in establishment of shirt factory.

Va., Farmville—Robt. B. Crawford, Propr., Kilkare Laundry, reported, rebuild burned plant.

Va., Roanoke—K. and M. Amusement Corp. chartered; C. F. Ketauver, Colonial Natl. Bank Bldg.

W. Va., Clarksburg—Flat Glass Specialty Co., capital \$50,000, chartered; P. H. White, 318 Rosemont Ave.

W. Va., Charleston—Evans Lead Co., capital \$1,000,000, chartered; James D. Ewing, 120 Bdwy., New York; principal works Vandalia; manufacture lead oxides and ingredients.

W. Va., Fairmont—Michael Bruchovich Co., New York, will operate shirt factory to be erected in city by local company to be formed; building will be erected on site of old Barnsville Woolen Mill; will be 3-story, 70x300 ft., install sprinkler system; cost \$43,000; project to be financed by company to be known as Fairmont Industrial Aid Co., C. H. Hardesty, 230 Locust Ave., Harry J. Hartley, 617 Fairmont Ave., interested; citizens to subscribe \$15,000.

W. Va., Huntington—Acme Casket Co., E. K. Mahan, Pres., R. & P. Bldg., leased building Twenty-fourth St. and Fourth Ave.; will remodel; has taken over former business of Wiley Casket Co.

Motor Bus Lines and Terminals

Georgia—Georgia Public Service Com'n., Atlanta, reported, granted permission to following companies for transportation of freight: National Convoy & Trucking Co., 1921 Clarkson St., Jacksonville, Fla.; United Express Lines; Benton Bros., 357 Nelson St., both Atlanta, and Hansberger Motor Transport Co. will all operate between Atlanta and Jacksonville; R. H. Jackson & Son, Natusulga, Ala., to operate between Atlanta and Birmingham, Ala.

Kentucky—Safeway Transit Co., Inc., Gallipolis, Ohio, authorized by State Utilities Com'n., Columbus, O., to operate inter-State bus line between Covington, Ky., and Parkersburg, W. Va., via Columbus, Chillicothe and Athens, O.

La., Lake Charles—F. C. Fontenot, Baton Rouge, reported, applied for permit to operate passenger bus and motor freight line Lake Charles to Creole.

Missouri—Public Service Com'n., Jefferson City, reported, granted permission to J. T. Fennessy, Vienna, to operate bus line between Dixon, Pulaski County, to Bagnell Dam, Miller County.

Mo., Lexington—White Line Stage Lines, chartered; Mike Lorantos, D. Davis; operate bus line between Kansas City and Higginsville.

Mississippi—Mississippi Motor Transportation Co., J. K. Hirsch, Pres., 102 Baum Ave., Vicksburg, reported, granted franchise to operate 3680 miles bus lines in Mississippi; operation to start in 90 days from Memphis to Jackson, via Clarksdale and Greenwood; Jackson to Gulfport, via Hattiesburg; Memphis to Jackson, via Grenada and Jackson to New Orleans, via Brookhaven. 6-19

S. C., Summerville—State Railroad Com'n., Columbia, granted permission to Harry R. Meyrs to operate motor freight service from Knightsville, near Summerville, to Charleston.

Texas—Pickwick Greyhound Lines, 1157 S. Wabash Ave., Chicago, Ill., reported, acquired several hundred miles of motor coach lines in Texas including Old Spanish Trail Coaches, operating between Pecos and San Antonio; M. S. Wren, Gen. Traffic Mgr., announced opening in Oct. of \$100,000 depot in Corpus Christi, and of \$150,000 depot in Nov. at Waco.

Texas, Lubbock—Pioneer Motor Lines, Garrett C. Abbott, remodeling building, 1208 W. Roadway, for union bus terminal.

Va., Clarendon—M. E. Church, Falls Church, Pres., Arlington & Fairfax Railway Co., reported, applied to State Corporation Com'n., for permission to operate busses over present right of way of railroad as far as Clarendon and across Memorial bridge into Washington.

Va., Portsmouth—Virginia Electric & Power Co., Richmond, expend \$30,000 for 5 buses.

Railways

Fla., Fort Lauderdale—Broward County Port Authority let contract to Ebsary Foundation Co., 1050 Biscayne Blvd., Miami, for 4.1 mi. Port Everglades Terminal Railroad. 6-26

Md., Annapolis—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract to D. F. Tyler Corp., 716 E. Charlotte St., Norfolk, Va., at \$126,264, for railroad track improvements, Naval Academy.

Mo., St. Louis—St. Louis-San Francisco Ry., B. T. Wood, V.-Pres. and Ch. Pur. Officer, ordered 10 car sets of underframe and superstructure parts and miscellaneous forgings for box cars, from American Car & Foundry Co., 30 Church St., New York.

Tex., Childress—Fort Worth and Denver Northern Ry., subsidiary of Chicago, Burlington & Quincy R. R. Co., A. W. Newton, Ch. Engr., Chicago, Ill., authorized by Interstate Commerce Comsn., Washington, to construct 110-mi. line, Childress to Pampa, to serve oil field, provided that company and Chicago, Rock Island & Pacific Ry. Co., W. H. Petersen, Ch. Engr., Chicago, Ill., arrange for joint construction and operation of line between Shamrock and Wellington, and extending south from Wellington.

Railway Shops and Terminals

W. Va., Jacksonburg—Baltimore & Ohio, R. R., H. A. Lane, Ch. Engr., Baltimore, Md., let contract to Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., for water-treating plant; 17x20 ft., 13,000 gal. per hour.

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Alabama—State Highway Comsn., Montgomery, opens bids Sept. 9 for 13 mi. conc. paving, Mobile-Mt. Vernon Highway, Mobile County; principal items include: 137,280 sq. yd. pavement, 5000 cu. yd. fine grading, 5000 cu. ft. V-shaped conc. gutter, etc.; R. D. Jourdan, State Highway Engr.

Alabama—State Highway Comsn., Woolsey Finnell, Director, Montgomery, opens bids Sept. 9 for 3 roads and 9 bridges: Mobile County—13 mi. plain cement conc., bit. conc., sheet or rock asphalt paving, 137,280 sq. yd. paving, 5000 cu. yd. fine grading, 5000 lin. ft. V-shaped conc. gutter; Jefferson County—grading and draining roads, Birmingham to Jasper, 477,632 cu. yd. excavation, 93,425 lb. rein. steel, 5 conc. bridges; 14.37 mi. grading, draining Birmingham to Leeds, 348,572 cu. yd. excavation, 123,519 lb. rein. steel, 4 bridges.

Alabama—State Highway Comsn., Woolsey Finnell, Director, Montgomery, opens bids Sept. 16 for 7 roads and fill: Sumter County—5.30 mi. gravel surface from toll bridge at Epes to Livingston-Gainesville road; Montgomery-Macon Counties—16.10 mi. gravel and surface treating, Montgomery to Tuskegee, 188,900 sq. yd. bit. surface; Montgomery County—31.43 mi. paving, Montgomery to Orion, 212,500 cu. yd. excavation; Limestone County—8.50 mi. paving, Decatur to Athens, 90,834 sq. yd. paving, 9300 cu. yd. excavation; Morgan County—3.63 mi. paving, Decatur to Hartsville, 40,000 sq. yd. paving; Dale County—17.54 mi. surface treating, Ozark to Pea River bridge, 205,800 sq. yd. double surface bit. treatment, 20,000 cu. yd. sand clay; Elmore County—Backfilling washouts near Reese's Ferry bridge, 28,500 cu. yd. excavation.

Ala., Bay Minette—State Highway Comsn., W. Finnell, Highway Director, Montgomery, opens bids Aug. 26 for 9.54 mi. grading, surfacing, Baldwin County; R. D. Jourdan, State Highway Engr.

Ala., Mobile—State Highway Comsn., R. D. Jourdan, Engr., Montgomery, opens bids Sept. 16 for 23½ mi. grading, draining road, Mobile to Mississippi State line via Wilmer, Mobile County.

Arkansas—State Highway Comsn., C. S. Christian, Engr., Little Rock, has low bids for 4 roads and 5 bridges: Pike County—6 mi. grading, draining, Murfreesboro-Nashville road, Highway 27, A. V. Martin, Benton, \$69,616; Miller County—463 lin. ft. steel bridge over Sulphur River, Texarkana-Louisiana State Line road, Highway 71, Vincennes Bridge Co., Vincennes, Ind., \$102,691; White County—3 mi. conc. paving, Bald

Knob-Judsonia road, Highway 67, James Stanton Construction Co., Leavenworth, Kans., \$72,532; Grant County—814 lin. ft. rein. conc. bridges and 2506 ft. earth embankment approaches, Sheridan-Fordyce road, Highway 167, Jones Construction Co., Fayetteville, \$51,770; Yell County—437 lin. ft. steel and conc. bridges and 2506 ft. earth embankment approaches, Danville-Magazine road, Highway 10, Fred Luttjohann, Topeka, Kans., \$42,054; Logan County—7 mi. grading, draining, Chismville-Booneville road, Highway 23, George W. Nickels & Son, Cottage St., Hot Springs, \$65,807; 553 ft. conc. bridges and 567 ft. earth embankment approaches, Booneville-Blue Mountain road, Highway 10, Fred Luttjohann, \$51,459; Johnson County—201 ft. conc. deck girder bridge over Greenbrier creek, Clarksville-East road, Highway 64, Fred Luttjohann; 7 mi. conc. paving, Paragould-Hopkins bridge road, Highway 25, J. P. McNulty, 2121 Cherry St., Pine Bluff, \$130,732. 8-7

D. C., Washington—Comms., Dist. of Columbia, open bids Aug. 26 for 20,000 sq. yd. cement conc. alleys.

Fla., St. Augustine—St. Johns County Comms., plan widening portion of Elkton-Tocol road.

Ga., Brunswick—City, E. C. Garvin, Mgr., plans expending \$40,000 for paving. See Financial News Columns.

Ga., Cuthbert—City plans expending \$20,000 for paving public square and 4 main streets. See Financial News Columns.

Kentucky—State Highway Dept., H. D. Palmore, Engr., Frankfort, plans asking bids soon for 2 roads: Floyd County—17 mi. grading, draining Haymond Highway; Bullitt County—13 mi. grading, draining Shepherdsville-Mt. Washington road; plans survey on road, Harlan to Virginia line, Harlan County; road Barbourville, toward Tye's Ferry, Knox County.

Ky., Benton—City expend \$35,000 for paving main thoroughfares.

Ky., Paducah—City Comms., considering driveway on S. Seventh St.

Ky., Whitesville—Town Trustees, J. T. Brown, Chmn., Farmers and Merchants Bank, opens bids Sept. 1 for curb and gutter, street improvements.

La., Monroe—Ouachita Parish Police Jury plans 1¼ mi. grading, Sterlington Loop road; plans graveling later; S. A. Collins, Parish Engr.

La., Pineville—City, Mayor and Bd. of Aldermen, plans receiving bids for partial rein. conc. paving Main St.

La., Minden—City, Mayor and Bd. of Aldermen, open bids Aug. 25 for conc. paving, curb and gutter Union St.; J. R. Murph, City Secy.

La., Shreveport—City Comms., have low bid from R. O. Marks, 2408 La Poloma St., for paving Columbia Ave., at \$11,081. 7-31

La., Tallulah—City, A. L. Sevier, Clk., opens bids Sept. 3 for Portland cement paving Walnut St., including grading, draining, curb and gutter; J. M. Fournay, Engr.

La., Tallulah—Madison Parish Police Jury, P. O. Benjamin, Secy. and Engr. in charge, opens bids Sept. 3 for 5¼ mi. gravel roads, including culverts, creosoted timber structures, etc.

Maryland—State Roads Comsn., Baltimore, has low bids for 7 roads and 3 bridges: Baltimore County—3.97 mi. amiesite resurfacing, North Point road, Baltimore Asphalt Block & Tile Co., 1320 N. Monroe St., Baltimore, at \$34,802; Cecil County—6.41 mi. conc. shoulders, Cayott's Corner to Cecilton, P. D. Phillips & Bro., Salisbury, Md., at \$20,949; Garrett County—4.79 mi. conc. shoulders, National Pike, M. F. McCabe, Salisbury, Pa., \$47,831; Kent County—10.33 mi. conc. shoulders, Chestertown toward Locust Grove, Field, Barker & Underwood, Commercial Trust Bldg., Philadelphia, Pa., \$52,250; Prince George's County—1.87 mi. conc. Cool Spring road, G. B. Mullin & Co., 1296 Upshur St., N. W., Washington, D. C., \$38,689; 3.84 mi. gravel, from near Accokeek to Charles County line, L. R. Colbert, Frederickburg, Va., \$19,057; 2.10 mi. conc. shoulders, Ager and Queen's Chapel roads, G. B. Mullin Co., \$11,115; Prince George's County—conc. slab, double-span bridge over Western Branch, Mullin Contracting Co., 3945 Greenmount Ave., Baltimore, \$10,013; Frederick County—conc. box culvert at underpass of B. & O. R. R., Monrovia, M. J. Grove Lime Co., Lime Kiln, Md.; Washington County—extension of triple-arch bridge over Antietam Creek, Funkstown, F. C. Gregory, Sutherland, Va., \$15,617; L. A. Stuart, Secy. 8-7

Maryland—State Roads Comsn., Baltimore, receives bids Aug. 26 for 5 roads:

Anne Arundel County—1.36 mi. gravel, Generals Highway, Cont. AA-93-72; 2 mi. gravel, from Mayo road toward Muddy Creek, Cont. AA-98-84; Baltimore County—1.6 mi. conc. shoulders, Falls Road, B-162-411; Frederick County—1.3 mi. conc., from Brunswick toward Olive School, Cont. F-154-62; Prince George's County—2.10 mi. hot or cold bit. mixtures resurfacing, Ager and Queen's Chapel road, Cont. P-133-311; L. H. Stuart, Sec.

Md., Annapolis—Bureau of Yards and Docks, Navy Dept., Washington, D. C., opens bids Aug. 27 for bit. surfacing roads and gutter repairs, Naval Academy (high power radio station).

Md., Baltimore—City, Bd. of Awards, has low bid from Arundel Construction Co., 910 Trinity St., at \$29,745, to grade, curb and pave with cement conc. streets in Contract No. 550; Nathan L. Smith, Highways Engr. 7-14

Md., Cumberland—City, Ralph L. Rizer, City Engr., has low bid from Cumberland Contracting Co., Valley St. Bridge, at \$24,679, for paving and repaving several streets with amiesite on conc. base. 8-7

Miss., Canton—Madison County, W. H. Bradley, Engr., opens bids Sept. 2 for 19 mi. grading, draining Dist. No. 4; 2.2 mi. improving Road Dist. 2.

Miss., Vicksburg—Maj. J. B. Holt, Supt., Vicksburg National Military Park, soon call bids for graveling 32 mi. park roads. 7-31

Miss., Walthall—Highway Comms., of Separate Road Dist. No. 2 opens bids Sept. 1 for improving and building 7 roads: Project 2—8 mi. excavating, grading, Chickasaw County line north of Hobenlinder to Clarkson, 8000 cu. yd. excavation; Project B—7 mi. grading, excavating, Grenada County line to Embury, 24,262 cu. yd. excavation; Project C—7 mi. Alva to Center School, 8000 cu. yd. excavation; Project D—7 mi. grading, excavating, Tomnolen to Wood's Store and 1 mi. north-east, 9750 cu. yd. excavation; Project E—14 mi. grading, excavating, Stewart to Edgeworth, 9800 cu. yd. excavation; Project F—2 mi. grading, excavating, 14,482 cu. yd. excavation; Project G—4 mi. grading, excavating, 6700 cu. yd. excavation for five bridges in Big Sand Creek bottom and Little Sand Creek bottom.

Mo., Clayton—St. Louis County, Walter E. Miller, Clk., has low bids for 5 roads: 20-ft. conc. paving Woodson road, William A. Riley Construction Co., 706 Chestnut St., \$30,40; 1322 ft. 20-ft. conc. paving, Lockwood Ave., Crean & Scott Construction Co., 1242 Sublette St., \$11,255; 9021 ft. 20-ft. conc. paving Florissant Ave., C. A. Moreno, Syndicate Trust Bldg., \$92,257; 24,482 ft. 20-ft. conc. paving Page Ave., Moore Bros. Construction Co., Edgar Ave., \$209,492; 960 ft. 41-ft. conc. paving Natural Bridge road, including sidewalks, William Watters, 2611 S. Kingshighway, \$21,410. 8-7

Mo., Springfield—City Comms., J. P. Ramsey, Commr. of Streets, plans paving alley east of Robberson Ave. and paving Franklin Ave.; S. R. Fisher, City Engr.

Mo., St. Louis—City, Bd. of Public Service, opens bids Sept. 2 for 7100 sq. yd. Warrenite bitulithic paving, 16,750 sq. yd. asphalt paving, 9000 sq. yd. grading, conc. paving; W. W. Horner, City Engr.

Mo., St. Joseph—City Bd. of Public Works, Harry L. Graham, Clk., plans grading 13th St.

Mo., St. Louis—City, Bd. of Public Service, opens bids Aug. 26 for improving 5 streets and rebuilding 2 streets and constructing sewers in Southwestern Sewer Dist. No. 5, Glaise Creek Storm Sewer Water Dist. No. 30, and public sewer outlet; W. W. Horner, City Engr. 7-31

N. C., Greensboro—City, Irving C. Brower, City Mgr., has low bid from Welker Bros., at \$9995, for 30,000 cu. yd. grading, W. Market St., from M. B. Sutton, Asheboro St., at \$5276, for conc. and steel culvert, W. Market St.; Ray Warren, City Engr. 7-31

Oklahoma—State Highway Comsn., A. R. Losh, Engr., Oklahoma City, has low bid from E. M. Eby, Wellington, at \$12,056, for 7.498 mi. surfacing Highway No. 49.

Okl., El Reno—City, Ethel Dowell, Clk., considering paving S. Roberts Ave. and S. Ellison Ave.

Okl., Frederick—State Highway Comsn., A. R. Losh, Engr., plans grading, draining State Highway 14 south of Snyder to Frederick.

Okl., Holdenville—Hahges and Seminole Counties, Roy Grace, Counties Engr., plan paving Highway 48 to Sasakwa, Seminole County.

Okl., Oklahoma City—City, E. M. Fry, Mgr., considering widening E. Twenty-third St.; George F. Brown, City Engr.

Okl., Tulsa — City, George L. Watkins, Mayor, considering widening E. Second St.

Okl., Wewoka — State Highway Comsn., Oklahoma City, receives bids in August to complete paving Highway No. 40 between Sasakwa and Wewoka, Seminole County; A. R. Loeh, State Highway Engr.

S. C., Greenville — City Council, A. C. Mann, Mayor, authorized paving E. Earle St. and sidewalk, E. North St. toward Overbrook.

S. C., Spartanburg — Spartanburg County Comms., considering building, grading and topsoiling road, end of Farley Ave. at Williams St. to Saxon Mills; considering topsoil road, Roebuck to connect with road from Moore to Poplar Springs Church.

Tenn., Nashville — City, Hilary E. Howse, Mayor, opens bids Sept. 12 for paving Seventh Ave., north, Gay St., Dallas Ave. and Petway St. (Hill's Alley).

Tenn., Nashville — Davidson County Highway Comsn., opens bids Aug. 28 for 1.6 mi. grading, draining road Project R-1 and building bridge over Walkers Creek north of Goodlettsville.

Tex., Dallas — Dallas County Comms., Court, Charles E. Gross, County Auditor, opens bids Sept. 15 for 2.7 mi. graveling Forney Ave., Buckner Blvd. to Scyene Rd.; Rollins & Clinger, Dist. Engrs.

Tex., Dallas — Dallas County Comms., Court, Charles E. Gross, County Auditor, opens bids about Sept. 8 for 2 1/4 mi. graveling Forney Ave. extension road.

Tex., Fort Worth — Comms. of Paving Improvement Dist. No. 105, Office of Coleman & Gantt, 711 Simmons National Bldg., open bids Aug. 21 for Fifth-Sixth-Ohio St. paving.

Tex., Highlands — City plans expending \$30,000 for street improvement, including Lynchburg Highway to 40 ft. through city and curb and gutter entire route. See Financial News Columns.

Tex., Houston — City, W. E. Monteith, Mayor, has low bid from Gulf Bitulithic Co., 2820 Polk St., for 2-in. Warrenite bitulithic over 6-in. conc. base paving Crawford St. at \$47,129; J. M. Nagle, City Engr.

Tex., Houston — City, W. E. Monteith, Mayor, plans receiving bids for paving San Felipe road (Vermont Drive) and Washington Ave. 50 ft. wide; J. M. Nagle, City Engr.

Tex., Houston — City, Fred W. Turner, Secy., plans 1049 ft. sidewalk, Canal St.; J. M. Nagle, City Engr.

Tex., Houston — City, W. E. Monteith, Mayor, plans paving N. MacGregor Dr.; J. M. Nagle, City Engr.

Tex., Laredo — Webb County, T. E. Huffman, County Engr., completing survey for 12-mi. extension Mines road to Webb Dimmit County line, connecting with through highway to Eagle Pass.

Tex., Marlin — Falls County, Wilson Road Dist., plans expending \$45,000 for roads. See Financial News Columns.

Tex., Plainview — State Highway Comsn., Austin, plans letting contract in January for paving Highway No. 24 west from Plainview to Olton, Hale County; Gibb Gilchrist, State Highway Engr.

Tex., Sherman — City plans expending \$100,000 for paving and bridges. See Financial News Columns.

Virginia — State Highway Dept., Richmond, has low bids for 5 roads and 2 bridges: Southampton County—357 mi. grading, draining, Route 12, bridge over Notoway Swamp, Blunt & Hayman, Brodnax, \$18,674; Nansemond County—378 mi. grading, draining, Route 10, Blunt & Hayman, \$47,51; Botetourt County—502 mi. grading, draining, Route 17, bridge over Catawba Creek, C. B. Hester, 1633 Spring Garden St., Greensboro, N. C., \$28,297; Bedford County—1,042 mi. paving, Route 10, Sam E. Finley, 292 North Ave., N. W., Atlanta, Ga., \$29,943; 0.51 mi. one course macad., Route 204, John Bower & Overstreet & Nance Construction Corp., Bedford, \$14,411; C. S. Mullen, Ch. Engr. 7-31

Va., Chesterfield — Chesterfield County, E. N. Perdue, Road Engr., start work in few weeks on 8 mi. asphalt, sand, stone chip and gravel roads in 5 districts.

Va., Staunton — State Highway Comsn., C. S. Mullen, Ch. Engr., Richmond, opens bids Aug. 26 for 1 mi. macad. paving, Route 39, Augusta County, 17,815 sq. yd. macadam, 11,854 cu. yd. excavation.

W. Va., Charleston — Kanawha County Court, R. N. Moulton, Clk., has low bids

for 4 roads and bridges: 3 mi. grading, draining road between Cabin Creek Junction and Ronda, J. F. Sites, Hamlin, \$58,464; 3 mi., Kellys Creek road, Brown & Floyd, Lowenstein Bldg., Charleston, \$70,512; 2 mi. road between Dunbar and Sattos, G. T. Fogle & Co., St. Albans, \$43,557; stone base on Johnson road, J. M. Randish, Clarksburg, \$8,878; superstructure of Rich Fork bridge over Kanawha Two Mile, E. R. Mills, Kanawha Ave., Charleston, \$52,000; Conrad M. Ross, County Road Engr.

W. Va., Grafton — State Road Comsn., C. P. Fortney, Chmn., Charleston, plans receiving bids for grading and hard surfacing State Route 86, Grafton to Halleck, Taylor County.

W. Va., Grafton — State Road Comsn., C. P. Fortney, Chmn., Charleston, probably soon let contract for grading and hard surfacing State Route 86, Grafton to Halleck, Taylor County.

W. Va., Middlebourne — Tyler County Comms., Court opens bids Aug. 28 for 4.25 mi. gravel or slag surfacing, 4.9 mi. slag surfacing, 2.66 mi. bit. retreat surfacing; 28-ft. span conc. slab bridge, McElroy Creek; 7-ft. span conc. box culvert, Prattis Run road; G. R. Clark, Engr.

W. Va., Parkersburg — City, Myrtle L. Hoffman, Clk., opens bids Sept. 1 for paving Maxwell Ave.; L. G. Merrill, City Engr.

W. Va., Wheeling — State Road Comsn., Charleston, receives bids Aug. 26 for 1 mi. conc. paving S. Bellaire St.; C. P. Fortney, Chmn.

Contracts Awarded

Ala., Birmingham — City Comsn., let contracts at \$9,035 for paving alley and streets: Paul Richter, 1805 Pearson Ave. Fromhold Construction Co., and Henning & Bragan; A. J. Hawkins, City Engr.

Ga., Oglethorpe — State Highway Bd., Atlanta, let contract to Dunn Co., Dawson, for paving 1 mi. Dixie Highway through Oglethorpe.

Ga., Rome — City, S. S. King, City Mgr., let contract to Minge Construction Co., Rome, at \$16,080, for 7700 sq. yd. vibrolithic conc. paving, including grading and storm sewers.

La., Slidell — Louisiana Highway Comsn., Baton Rouge, let contract to Nelson Bros., Columbia Mutual Tower, Memphis, Tenn., at \$24,680 for 2.3 mi. surface treating highway on Slidell side of Rigolets bridge.

La., Shreveport — City Comsn., L. E. Thomas, Mayor, let contract to R. O. Marks, 3408 La Poloma St., for paving Columbia St., Line Ave. to Thornhill St.; H. E. Barnes, City Engr. 7-31

Md., Baltimore — City, Bd. of Awards, let contract to Aiello Construction Co., Gough and Dean St., at \$25,528, to grade, curb and pave with cement conc. streets in Contract No. 558, 10650 sq. yd. conc.; Nathan L. Smith, Highways Engr. 8-14

Md., Towson — Baltimore County Comms., John E. Haut, Ch. Clk., let contract to Maloney Bros., 1111 Rutland Ave., Baltimore, at \$21,364, .84 mi. conc. paving, Group 8; Samuel A. Green, Roads Engr.

Miss., Collins — State Highway Comsn., Jackson, let contract to James Henderson, Lumberton, for Reddock Ferry-Mount Olive road, Beat 4, 5750 cu. yd. excavation and borrow. 7-31

Miss., Kosciusko — City let contract to Barber Bros. Construction Co. at \$26,010 for 2 in. Warrenite on 5-in. conc. paving, Jefferson St.

Miss., Kosciusko — Highway Comms. of McAdams, Sallis and Bodone Separate Road Dist. of Attala County, L. D. Kuykendall, Chmn., let contract to A. J. Brown Contracting Co., Jasper, Ala., for graveling road; Lynn Gravel Co., Avalon, Miss., furnish gravel. 7-24

Miss., Winona — Montgomery County Road Comms. of Road Dist. No. 4 let contract to Lynn Gravel Co., Avalon, for graveling roads in Dist. No. 4.

Mo., Boonville — H. A. Worman, Pittsfield, Ill., has contract for graveling 17 mi. road in Palestine Special Road Dist.

Mo., Cape Girardeau — Cape Girardeau Amlesite Co., M. J. Wragg, Mgr., has contract for amiesite slab on gravel base paving, through State College campus, Pacific St. to Henderson.

Mo., Sedalia — Pettis County Court let contracts for 4 gravel roads: 8 mi., Hickory Point vicinity, W. F. Ferris, 1720 S. Grand St., and J. R. Gwinn, at \$1.81 per cu. yd.; 2 mi., Funk road, John Maltseberger, 93 cents per cu. yd.; Brockman road, Hampton and Brockman, 78 cents per cu. yd.; 1 1/4 mi., Kendrick road, Harpstrite & Welliver, \$1.80 per cu. yd.

Mo., Springfield — City Comms., J. P. Ramsey, Commr. of Streets, let contract to Edgar V. Koch, 952 S. Delaware St., for paving and curbing Douglas Ave.; F. X. Barron for conc. sidewalks on Turner St. at 72 cents per ft.; S. R. Fisher, City Engr.

N. C., Roxboro — City let contract to Cobb & Homewood, Inc., Chapel Hill, for 30,000 sq. yd. topsoiling streets, for 18,000 sq. yd. topsoiling and surface treating at plant of Collins & Aikman Corp., and for street improvements in extension of mill village; Spoon & Lewis, Consult. Engrs., Jefferson Bldg., Greensboro.

Okl., Chickasha — City, C. A. Chincholl, Clk., let contract to W. E. Edmiston Construction Co., Chickasha, at \$34,697, for 6-in. conc. paving 30 ft. wide, 16th St.; Robert O. Bradley, Engr.

Okl., Tulsa — City, Geo. L. Watkins, Mayor, let contract to Standard Paving Co., 2611 E. 11th St., at \$36,747, for grading, curbing, paving Street Improvement Dist. 1049.

Okl., Tulsa — City, H. A. Parker, City Engr., let contract to Calumet Construction Co., Tulsa, at \$44,335, for Class F-7 conc. paving 4 blocks, 26 ft. wide.

S. C., Abbeville — State Highway Comsn., Fred L. Mays, Chief, R. W. Jones, Res. Engr., Abbeville, let contract to W. W. Tuck & Son and C. M. McKenzie, Abbeville, at \$23,000, for 1.742 mi. grading approaches to Little River bridge, 28 ft. fill, 34 ft. cut, rein. conc.

Tennessee — Dept. of Highways and Public Works, T. E. McEwen, State Highway Engr., Nashville, let contract to J. B. McCrary & Co., Citizens Southern Bank Bldg., Atlanta, Ga., at \$179,226, for 10.616 mi. paving, Highway 5, Martin to Kentucky line, Weakley-Obion Counties. 7-31

Tennessee — Dept. of Highways and Public Works, T. E. McEwen, Engr., Nashville, let contracts for 3 roads, 2 bridges and approaches: Henderson County—10.661 mi. grading, draining, Highway 100, Everglades Construction Co., Hialeah, Fla., \$139,587; Hamilton County—1.411 mi. grading, draining Highway 38, Brown Contracting Co., 706 Manning St., Chattanooga, \$60,357; Montgomery County—5.932 mi. grading, draining Highway 76, Bradley & Wilson, Kevil, Ky., \$21,587; Coffee County—2 bridges and approaches on 1.300 mi. Highway 53, Hagen-Bagley Construction Co., Fayetteville, \$39,000. 7-31

Tex., Amarillo — City, Wm. Durham, City Mgr., building Third Ave. subway with own forces; paving awarded Gober & Thompson, 316 1/2 Polk St.

Tex., Brackettville — Kinney County, John H. Stadler, Judge, let contract to Dozier Construction Co., Littlefield Bldg., Austin, at \$18,160, for conc. bridges, culverts and paving; E. P. Arneson, Engr., Gunter Bldg., San Antonio. 7-24

Tex., Brownsville — Cameron County, Judge, A. V. Logan, County Commr., let contract to Dodds & Wedegartner, San Benito, for paving Holly Beach road from Long Corner to limits of San Benito precinct.

Tex., Houston — Harris County, Norman Atkinson, Judge, let contract to Russ Mitchell, Inc., Petroleum Bldg., at \$115,022, for 3.7 mi. 20-ft. grading, conc. paving, Wallisville, Oats roads.

Tex., Houston — City Council, W. E. Monteith, Mayor, let contract to Uvalde Rock Asphalt Co., 820 Dowling St., at \$50,004, for paving Crawford St., 50 ft. wide; to Griswold Bros., 3840 Polk St., at \$3122, for graveling Whitty and several neighboring streets; J. M. Nagle, City Mgr. 8-14

Tex., Port Arthur — City, J. W. O'Neal, Mayor, let contract to McKenney & Parmley, Nacdoches, at \$71,208, for 2-course inverted penetrated asphalt topping 46 mi. streets and avenues. 7-31

Va., Luray — R. W. Moore & Co., Staunton, Contra., let sub-contract to Pace Construction Co., Mountain Trust Bldg., Roanoke, for grading Newport-Stanley link of Luray-Shenandoah State road, Route 815, Page County. 7-24

W. Va., Clarksburg — G. A. Kesling & Sons, Wyatt, have contract for stone base on road from Oakdale down Hingamon Creek to end of present pavement; George L. Coyle, Harrison County Engr.

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported

Ala., Birmingham—Hornbuckle Contracting Co., Standard Bldg., Atlanta, Ga., reported has contract at \$57,641, for Southside sanitary sewer; A. H. Dimijiam, Woodward Bldg., for sanitary sewers Thirty-second St., etc. 8-14

Ala., Birmingham—City, A. J. Hawkins, Engr., receives bids Sept. 10 on additional work on \$3,000,000 proposed storm drainage project, first section of Valley Creek and second section of Village Creek; work includes widening, deepening, straightening channels of the 2 creeks and sections, at cost of \$300,000; negotiations for rights of way on various other section under way, soon call for bids. 8-14

Ga., Atlanta—City having survey and report prepared by Whitman, Reardon & Smith, Baltimore Trust Bldg., Baltimore, Md., for repairs to brick, conc. and rock sewers and culverts; cost \$10,000; Clarke Donaldson, Ch. of Constr., 689 Claridge Ave.; Henry Benson, Engr. of Sewers. 2-20

Mo., Mexico—City, reported, plans \$25,000 sewage disposal plant.

Mo., Sarcoxie—Commercial Club, reported, interested in installation sewer system.

Mo., St. Louis—Bd. of Public Service approved plans for constructing principal section of Maline Creek sewer, making possible last link of Kingshighway northwest from Goodfellow Ave. and Hall's Ferry Rd. to Broadway and Riverview Drive; cost \$300,000; soon call for bids; another section of sewer yet to be built is 1500 ft. of open channel and underlying foul water duct to replace Maline Creek proper between Riverview Drive and Mississippi River.

Mo., St. Louis—See Roads, Streets, Paving.

Mo., St. Louis—Riley Contg. Co., 110 N. Seventeenth St., reported, has contract at \$37,000 for Mill Creek storm sewer.

Okla., Britton—Benson & Farrar, Guthrie, reported, have contract at \$48,000 for sewers. 7-24

Okla., Geary—City, J. T. Stephenson, Clk., receives bids Sept. 4 for vit. clay sewers, sewage disposal plant.

Okla., Oklahoma City—J. D. Mann Construction Co., 815 W. Main St., reported, has contract for Gatewood storm sewer; George F. Brown, City Engr.

Okla., Shattuck—L. S. Fisher Const. Co., reported, has contract for sewer extension; Wood Engineering Co., Consult. Engrs., Perine Bldg., Oklahoma City.

Okla., Tulsa—City, George Watkins, Mayor, construct storm sewer provide drainage for Bren Rose addition.

S. C., Spartanburg—C. M. Guest & Sons, Spartanburg, estimating on mechanical work in connection with sewage disposal plants; all of building, construction and concrete work, etc.; bids opened Sept. 2. 8-7

S. C., Spartanburg—Following contractors estimating on sewer Metropolitan Sewer Dist., T. H. Daniel, Chmn.; bids opened Sept. 2; work includes one 3,000,000 gal. capacity and one 1,500,000 gal. capacity separate sludge type disposal plants; about 15 miles of 15 to 36-in. vit clay or conc. pipe sewers; erect brick building; co c. footings; plans by Harwood Beebe Co., Engrs., Spartanburg; C. M. Guest & Son, both Montgomery Bldg., and Fiske-Carter Constr. Co., 121½ W. Main St., both Spartanburg; Dysard Constr. Co., Terminal Bldg., Chas. C. Case, 249 Peachtree St., N. E., and Hornbuckle Contg. Co., Standard Bldg., all Atlanta, Ga.; Boyd & Goforth, Builders Bldg., V. B. Higgins, Kinney Bldg., Tucker & Laxton, Independence Bldg., and The McClelland Co., Latta Arcade, all Charlotte, N. C.; A. H. Gulon & Co., 256 W. Main Ave., and Brown-Harry Co., 275 E. Main Ave., both Gastonia, N. C.; DeJulio Constr. Co., Memphis, Tenn.; and E. M. Scheffow, 10 Sherwin Block, Elgin, Ill. 8-7

Tenn., Knoxville—G. W. Ferris Construction Co., reported, low bidder for construction Temperance St. storm sewer.

Tex., Amarillo—Clowe & Cowan, 401 Harrison St., Amarillo, reported, have contract for 500 ft. vit. sewer.

Tex., Pettus—See Water Works.

Telephone Systems

Fla., West Palm Beach—M. Scott Weakley, former director of Station WLBK, Kansas City, Mo., reported, interested in construction radio broadcasting station.

S. C., Spartanburg—Virgil V. Evans, Owner, of Radio Station WSPA, will erect radio station; 40x20 ft.; 2 story; granite construction; hardwood floors; tile roof; cost of building \$20,000; cost of equipment, \$25,000; install R. C. A. equipment. 7-31

Tex., Bryan—Southwest Telephone Co. completed plans for improvements and enlargements; extend line into rural districts; rebuild lines into A. and M. College park plant, build toll line into Caldwell; work under direction of I. B. Humphreys.

W. Va., Charleston—Walter Fredericks, 309 Beuhring Ave., reported, removed radio station WWVA from Wheeling to Charleston.

Textile Mills

Miss., Corinth—Corinth Hosiery Mills opens bids at Chamber of Commerce Bldg., Aug. 28 for construction of mill and boiler house, cost \$100,000; 1 story; struc. steel frame; conc. foundation; brick walls store trim; maple floors; steel sash; sprinkler system; following contractors estimating: C. M. Guest & Son, Sharpe St., Anderson, S. C.; A. K. Adams Co., 542 Plum St., N. W., Atlanta, Ga.; Batson-Cook Co., West Point, Ga.; Fiske-Carter Co., Masonic Temple, Gallivan Constr. Co., Gallivan Bldg., and Potter & Shackelford, Inc., Allen Bldg., all Greenville, S. C.; Gauger-Korsmo Co., Fidelity Bank Bldg., H. A. McGuire & Co., Dermon Bldg., Consolidated Contractors, 658 East St., and W. W. Yarbrough, 209 Cedar St., all Memphis, Tenn.; M. T. Reed Constr. Co., Belson; J. W. Chambers Lumber Co., Athens, Ala.; E. G. Parish Constr. Co., Jackson; Elmer T. Hitchcock, Florence, Ala.; Wise Granite & Construction Co., American Natl. Bank Bldg., Richmond, Va.; Galyean Bros., Nichols & Taylor, Reynolds & McCarter, Hawkins Lumber Co., and W. P. Dalton, all of Corinth. 7-17

N. C., Sevier—W. W. Neal, Marion, and associates, reported, acquired Sevier Knitting Mills.

Tenn., Fayetteville—Rieback & Mandell, 40 E. 34th St., New York, will operate silk crepe and satin dress goods mill; install 60 looms; work of constructing building, cost \$15,000, being done by Nile Yearwood.

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification

Ala., Tuskegee—Trustees of Tuskegee Institute authorized boring of additional wells for water supply for school and surrounding community.

Ark., Cabot—J. O. Gunter, Dallas, reported, granted water works franchise.

Ark., Clarksville—W. L. Winters, Engr., Fort Smith, completed plans for securing water from Big Piney Creek; will present to city council for consideration; project will cost \$188,450, including intake tower, sedimentation basin, filters, force mains, valve house, etc. 7-17

Ga., Lincolnton—Town, reported, having survey made for installation water works.

Ky., Sturgis—City, reported, let contract to Christensen Bros., Urbana, Ill., at \$75,000, for water distribution system, Sec. 1, 2 and 3. 6-26

La., Alexandria—L. B. White Drilling Co., low bidder for deep well at U. S. Veterans Hospital. 8-7

La., Gilbert—Town, reported, let contract to Robert Dessell, Cheneyville, for water works system; Dixie Mill & Supply Co. for valves; Chicago Bridge & Iron Co., Magnolia Bldg., Dallas, Tex., for elevated steel tank; E. P. Joseph, Engr., Glenmora.

Md., Baltimore—Charles Brown Cornell, 828 Fifth Ave., Youngstown, O., appointed construction engineer of proposed \$3,500,000 Prettyboy dam and reservoir; date of openings bids for construction not set. 8-4

Miss., Indianola—R. D. Cole Mfg. Co., Newnan, Ga., has contract to furnish, deliver and erect on foundations furnished by owners 100,000 gal. elevated steel tank on four post steel tower of sufficient height to elevate capacity 100 ft. above supporting foundations with complete accessories; work now under way; W. B. Montgomery & Associates, Henry Memorial Bldg., Jackson, Miss., Engrs. 8-14

Mo., Hornersville—City having preliminary plans prepared by Russell & Axon, 6200 Easton St., St. Louis, for water works and distribution system; votes soon on \$25,000 bonds. 7-17

Mo., Lamar—City, reported, soon receive bids for water filtration plant; \$20,000 bonds voted; J. W. Hagney, Engr.

Mo., Liberal—City, reported, plans \$40,000 water works system; Shockley Eng. Co., Engrs., 800 Graphic Arts Bldg., Kansas City.

N. C., Warrenton—Town retained Spoon & Lewis, Consult. Engrs., Jefferson Bldg., Greensboro, to design conc. work in connection with construction of deferrization plant, equipment for which will be furnished by Permutit Co., 440 Fourth Ave., New York; W. H. Boyd, Henderson, Resident Engr.

Okla., Geary—City, reported, receives bids Sept. 4 for extending water works, including pumping equipment, etc.; V. V. Long & Co., Engrs., Colcord Bldg., Oklahoma City. 6-19

Okla., Norman—City, reported, let contract to Fairbanks, Morse & Co., 1218 Liberty St., Kansas City, Mo., for Diesel engine and air compressor; cost \$30,000.

Okla., Crescent—City, J. Favor, Supt., Water Dept., install additional equipment.

Okla., Eaglesboro—City, A. Janard, Mayor, reported, plans additional water supply; expend \$15,000.

Okla., Holdenville—City votes Aug. 26 on \$225,000 water works bonds.

Okla., Mangum—City, H. T. Lawrence, Engr., reported, plans additional water supply; cost \$30,000.

Tenn., Nashville—City, reported, changed route of water mains Gallatin Rd., etc.; will call for new bids; W. W. Southgate, Engr. 6-19

Tenn., Nashville—City, Hilary E. Howse, Mayor, receives bids Aug. 26 for installing and repairing water pipes, Seventh Ave., Gay St., etc.

Tex., Big Spring—Williamson-Jacobson, Inc., Amarillo, reported, constructing reservoir.

Tex., Athens—City, reported, expend \$25,000 for underground reservoir.

Tex., Beaumont—S. W. Freese of Hawley, Freese & Nichols, 411 Capps Bldg., Fort Worth, completing water works survey. 5-29

Tex., Dalhart—James Stanton Construction Co. laying water mains into Kendricks Addition.

Tex., Houston—E. J. Croffet, San Antonio, reported, acquired Humble water works on Humble branch of Atascocita Rd.

Tex., Houston—City, James B. House, Water Commr., reported, will acquire water distribution system in Sunset Heights; R. H. McAndrew, 1424 Kipling St., low bidder for constructing water mains in Sunset Heights, along Twentieth, Eighteenth Sts., etc.; R. H. McFarland, for water mains along Lowell St.; Tennant Co., Esperson Bldg., for furnishing motor driven pump; International Filter Co., 333 W. 25th Place, Chicago, Ill., for furnishing Venturi tube and measuring instrument. 8-7

Tex., Kerrville—Wilson & Seward, have contract at \$58,000 for water distributing system, install 34 fire hydrants, lay 35,000 ft. of 6-in. to 10-in. pipe.

Tex., Pettus—Central Power & Light Co., Frost National Bank Bldg., San Antonio, reported, install water works and possibly sewer system.

Tex., Port Arthur—Gulf Refining Co., Frick Annex, Pittsburgh, Pa., reported, plans constructing rein. conc. water carrying tunnel 10 ft. in diam. from plant to Lake Sabine to provide additional water for cooling purposes at its plant; Chas. R. Stevenson, Plant Mgr., applied to County Commrs. for right of way; 3 miles long; cost \$300,000.

Va., Bluefield—City voted \$40,000 water improvement bonds. 8-7

Va., South Boston—Allen J. Saville, Inc., Electric Bldg., Richmond, making water works survey.

W. Va., Paw Paw—Town, Geo. S. Filler, Mayor, assisted by advisory committee of 5 citizens about to start investigation of feasibility of installing water system for town; seemingly only source of water supply would be deep wells, or Potomac River, latter of course to be filtered; will have electricity for power; See Want Section—Machinery and Supplies.

Woodworking Plants

Ky., Frankfort—Frankfort Chair Co. rebuilding burned plant at State Reformatory; 250x60 ft., 3 story; cost \$35,000; constructed with prison labor. 7-10

FIRE DAMAGE

Ala., Fulton—Scott Lumber Co.'s saw mill; loss \$300,000.

Ala., Gadsden—Stockhouse No. 1 of Southern Mfg. Co.; loss \$30,000.

Ala., York—Presbyterian Church; loss \$10,000; Rev. J. M. Partridge, Pastor.

Ark., Prescott—Oil tanks of James Berry's Sons Co. refinery.

Ark., Charleston—Fair Store owned by G. H. Obar; loss \$15,000.

Ark., Dardanelle—John F. Parker's residence; loss \$10,000.

Fla., West Bay—P. N. Hutchison's residence.

Fla., West Palm Beach—Jones Mattress & Furniture Co.'s plant Fourth Ave. and Railroad St.

Ky., Mt. Sterling—Jos. Oldham's residence; loss \$6000.

Ky., Providence—Coal tippie at No. 3 mine of Providence Coal Co.; loss \$50,000.

La., Oak Grove—Cotton gin operated by Joe Durrett; loss \$12,500.

Md., Chewsville—Barns and outbuildings on farms of Luther K. Long and Otho Smith near Chewsville; loss \$10,000.

Miss., Macon—Macon Hickory Mill, owned and operated by Ed F. Hardin.

Miss., Meridian—W. J. Sharp's dwelling; Dr. Rosa Weiss' dwelling, both 34th Ave. near First St., Fewell Survey.

Miss., Tupelo—Residence of O. T. Trapp, Jr.; residences of John Moore and Robt. Moore, both Harrisburg; J. V. Bickerstaff's residence, E. Tupelo.

Miss., Vicksburg—Martin Bebler's residence, Jackson Highway.

Mo., Carthage—McDaniel Milling Co.'s plant at 323 Meridian St.

Mo., Noel—Twenty-room annex to City Hotel; loss \$10,000.

N. C., Emma—Hyatt Mfg. Co.'s plant; loss \$60,000.

N. C., Scotland Neck—P. E. Shields residence.

Okla., Bartlesville—National Refining Co.'s service station on W. Fourth St.

Okla., Coyle—Bridge of State Highway Comsn., A. R. Losh, Engr., Oklahoma City; loss \$100,000.

Okla., Duncan—Lumber yard of Long Bell Co.; loss \$75,000.

S. C., Cowpens—Sub station of Southern Power Co., Charlotte, N. C.; loss \$75,000.

Tenn., Bordeaux, R. D. from Nashville—Toney St. Charles' building, occupied by N. O. Bailey Grocery Store; loss \$10,000.

Tenn., Johnson City—Robt. Winkleman's residence near Johnson City; E. P. Ross, barn.

Tenn., Shelbyville—Country residence of Dr. A. F. Snell, Erie Bldg., Cleveland, O.

Tex., Ennis—J. B. Moorhead's residence; Pentecostal Church.

Tex., League City—Residence of W. H. Reddcliffe, Prop., Palmcliff Dairy; loss \$7000.

Tex., Pendleton—Masonic Temple, Post Office, telephone exchange, auto storage bldg. and several stores; loss \$50,000.

Va., Farmville—Kilkare Laundry, owned by Robt. B. Crawford; loss \$15,000.

Va., Lawrenceville—Fifth floor of girls' dormitory at St. Paul's Industrial School for Negroes; loss \$40,000; A. H. Turner, Bus. Mgr.

Va., Leesburg—Leesburg Lime Co.'s plant; loss \$10,000.

Va., Norfolk—Virginia Wood Products Co.'s basket factory and shed, Chesterfield Heights.

Va., Sedley—J. M. Johnson's general store and garage.

Va.-Tenn., Bristol—Charles H. King's barn on farm on Blountsville Pike; loss \$10,000.

seat 900; Miller & Martin, Archts., Title Guarantee Bldg., both Birmingham; J. A. Lewis, Engr.

Ark., Little Rock—B'Nai Israel Congregation, M. L. Altheimer, Pres., 1801 Arch St., advises nothing definite as yet on \$200,000 temple; may start work early in 1931. 1-16

Ark., Little Rock—Pulaski Heights Baptist Church; \$125,000 to \$150,000 bldg.; Petter & McAninch, Inc., Archts., Pyramid Life Bldg., advise will not be ready to go ahead for month or so; Gothic type, brick and stone, auditorium seat 1000, Sunday school seat 1000, assembly room in basement seat 500. -10

Ga., Moultrie—First Baptist Church, G. L. Dosteer, Chmn., having plans for Sunday school refigured by Huber Construction Co., W. J. Pippin, both Moultrie, and Daniel Lumber Co., LaGrange; T. Firth Lockwood, Archt., 211 Murrah Bldg. 6-5

Mo., Kansas City—Budd Park Christian Church, St. John and Brighton St., erect \$20,000 addition; 2 stories; 70x54-ft. combined gymnasium-community hall with stage; classrooms on first floor.

N. C., Charlotte—St. Peters R. C. Church, Rev. Ambrose Gallagher, Pastor, plans \$132,000 church, \$52,000 auditorium, \$27,000 rectory and \$22,000 nurses' home; school recently completed.

Tex., Midland—Methodist Church, Rev. Leslie A. Boone, Pastor, erect \$75,000 brick and rein. conc. bldg.; Peters, Strange & Bradshaw, Archts., Myrick Bldg., Lubbock, and Big Springs; may start work within 60 days.

Tenn., Raleigh—Methodist Church, Rev. C. Hewitt, Pastor, will let contract to veneer and remodel bldg.; construct 48x38-ft. basement. See Want Section—Building Material and Equipment. 8-14

Va., Clarendon—Arlington Presbyterian Church, Thos. J. DeLashmuth, Chmn., Bldg. Comm., has plans nearing completion by A. F. Thelander, Archt., Rees Bldg., Washington, D. C., for \$20,000 addition; native stone, auditorium seat 300, classrooms in basement.

City and County

Ala., Birmingham—Jefferson County Bd. of Revenue has low bid at \$197,900 from Day & Sachs, 2400 Fifth Ave., S., for Jefferson County Alms House; Turner & Van Arman, Archts., Martin Bldg. 8-14

Ark., Bentonville—City, Dr. R. O. Pickens, Mayor, considers erecting \$15,000 auditorium; brick and rein. conc., 2 stories and basement.

Ga., Barnesville—Lamar County Bd. of Commrs., Ben H. Hardy, selected E. C. Wachendorff, Standard Bldg., Atlanta, as architect for \$65,000 courthouse and jail; brick, stone trim, conc. footings, 2 stories, comp. roof. 7-31

La., Pointe a la Hache—Plaquemines Parish Police Jury remodel courthouse and jail; brick work, plastering, tile roof; Theo. L. Perrier, Archt., Maritime Bldg., New Orleans.

Okla., Dewey—Board of County Commrs., W. K. Blachly, County Clk., Bartlesville, receives bids Aug. 18 for 60x90-ft. hog barn and 60x90-ft. cow barn, Fair Grounds; \$12,000; plans on file with above.

Okla., Stillwell—Adair County, Sam J. Starr, Clk., voted \$60,000 courthouse bonds; stone, 2 stories, 70x64 ft., cement floors, asphalt roof, brick work; F. A. Duggan, Archt., 114 E. Second St., Tulsa. 4-17

Tex., Beaumont—City, S. D. O'Connor, Fire Chief, soon select architect for fire station; \$85,000 available.

Tex., Corpus Christi—Nueces County Bd. of Commrs., having plans drawn by Dielmann & Levy, State Natl. Bank Bldg., for \$100,000 addition to courthouse.

Tex., Waco—City Commission erect \$70,000 central fire station and fire alarm bldg.; 4-story drill tower.

Dwellings

Ala., Birmingham—Dr. P. T. Falletta, Empire Bldg., erect English type cottage, Norwood; brick veneer, 1 story; Turner & Van Arman, Archts., Martin Bldg.; bids in.

D. C., Washington—Claude Wyant has permit for 2 dwellings, 715-17 Oglethorpe St., N. W.; 2 stories; \$16,000.

D. C., Washington—John Brayshaw, 817 A St., N. E., has permit for \$10,000 residence, 3240 Patterson St.; brick and tile, 2 stories.

D. C., Washington—C. Carroll Collum has permit for \$10,000 residence, 3611 Patterson St., N. W.; brick and tile, 2 stories.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Ark., Little Rock—Salvation Army, R. W. Reynolds, Pres., Glover Bldg., plans brick and rein. conc. bldg.; 2 stories and basement, wood floors, comp. built-up roof; Thompson, Sanders & Ginocchio, Archts., Hall Bldg.

Ark., Little Rock—Young Men's Christian Assn., Sixth and Broadway, H. T. Terry, Pres., having plans drawn by Thompson, Sanders & Ginocchio, Archts., Hall Bldg., for 3 additional stories; Colonial type, brick, rein. conc., 100x140 ft., wood floors, misc. steel and iron, comp. built-up roof. 10-3-29

Fla., Tampa—Young Women's Christian Assn., Miss Gladys Taber, Sec., plans 7-story bldg., instead of 4-story structure lately noted; first 2 floors 42x100 ft., remainder 42x42 ft.; \$100,000; M. Leo Elliott, Archt., 706 Franklin St. 7-24

Miss., Charleston—Ancient Free and Accepted Masons consider rebuilding burned temple; probably brick, 2 stories and basement, comp. roof.

Mo., Conway—Conway Lodge No. 93, I. O. O. F., Dr. J. W. Lindsay, member, Bldg. Comm., erect 2-story bldg.; brick, 40x100 ft.; bids in.

Mo., St. Charles—Lodge No. 690, B.P.O.E., let contract to Chas. Borfeld, 128 N. Fifth St., to remodel and erect addition to bldg.; brick, marble, terra cotta, rubble stone, 3 stories and basement, steel and iron work, asbestos shingle and tile roof; T. P. Barnett Co., Archt., Arcade Bldg., both St. Louis. 7-1

N. C., Lexington—Georgia Junior Order United American Mechanics erect chapel, Junior Order Home, to be called Georgia Bldg.

Tenn., Knoxville—Benevolent Protective Order of Elks receiving bids for \$275,000 clubhouse, Gay St. and Hill Ave.; rein. conc. frame, first floor stone, brick above, 5 stories above ground, 100x125 ft., conc.

and tile floors, conc. foundation, comp. roof; furnishings, equipment, etc., \$30,000; Baumann & Baumann, Archts., 813½ Market St. 6-12

Bank and Office

Ark., Mountain Home—Farmers & Merchants Bank, J. H. Wayland, Pres., erect \$10,000 brick and conc. bldg.; drawing plans.

Fla., Palm Beach—Palm Beach Co., Seaview Ave., has low bid from Roderick A. MacNeil Co., 336 S. Palm Beach Ave., for \$30,000 to \$35,000 bldg. for main offices of E. F. Hutton Co., S. Ocean Blvd.; Addison Mizner, Archt., 337 Worth Ave. 7-10

Okla., Tulsa—Mid-Continent Petroleum Corp., Cosden Bldg., excavating for \$50,000 office bldg. at refinery, West Tulsa; 2 stories and full basement.

Tex., Brownsville—Chamber of Commerce considers erecting \$10,000 addition; struct. clay tile, stucco and rein. conc.; architect not selected.

Tex., Dallas—J. W. Crowder Realty Co., 1711 Santa Fe Bldg., start Sept. 1 to raze bldgs. on site of proposed 31-story National Bldg., Commerce and Lane Sts.; stone, 31 stories, including 3 in basement for garage, interior corridors of walnut panel with marble to full height of first floor, conditioned air, concealed radiation, carpeted floors; Lunch Club on 25th; private dining rooms, sales, conference and directors' rooms; interior design by Whitson & Roberts, Santa Fe Bldg.; exterior patterned after bldg. by Holabird & Root, 333 N. Michigan Ave., Chicago, Ill. 5-8

Churches

Ala., Avondale, Birmingham—Avondale M. E. Church, South, J. A. Smith, Chmn., Bldg. Comm., First Natl. Bk. Bldg., start work about Sept. 1 on auditorium; 1 story and balcony, 85x60 ft.; stained glass windows,

Fla., Miami—Dr. W. J. Fitzpatrick, Calumet Bldg., erect \$10,000 residence and garage, 557 Meridian Ave.; Spanish type, conc. block and rein. concrete.

Fla., Palm Beach—E. T. Statesbury has low bid at \$147,875 from C. G. Warner Co., Inc., Sunrise Ave., for alteration and addition to residence, N. Ocean Blvd.; low bid for Quarry Key stone, Mizner Industries, Inc., 337 Worth Ave., at \$9840; Treanor & Fatlo, Archts., Phipps Plaza.

Ga., Atlanta—Neal Meier, Hurt Bldg., erect brick residence, Dunwoody Rd.; Tucker & Howell, Archts., Rhodes Haverly Bldg.; receiving bids.

Ga., Savannah—Mrs. Raymond V. Harris purchased homesite, Victory Drive, Granger Ward.

Md., Baltimore—J. W. G. Martin purchased property, Worthington Valley near Shewan, through Albert P. Strobel, Jr., & Co., 810 N. Charles St.; plans residence.

Md., Baltimore—Clifton Building Co., Wm. H. Gentry, Pres., 2635 Kirk Ave., erect 13 porch front dwellings, 2 stories; \$40,000.

Miss., Tupelo—John Moore and Robt. Moore each rebuild residence noted burned, Harrisburg.

N. C., Old Town, Winston-Salem—Geo. Flynt, 928 N. Blvd., erect \$37,000 residence; brick, 2 stories and basement, hardwood and tile floors, wood joists, slate roof; Northup & O'Brien, Archts., Starbuck Bldg.

S. C., Pinopolis—R. T. Harvey plans residence.

Tex., Beaumont—Albert Shepherd, 2154 Liberty St., erect \$15,000 to \$20,000 residence, Ashley St. near Eighth St.; Jos. Beck, Archt., San Jacinto Annex; drawing plans.

Tex., Houston—G. W. Tuttle, 2619 Main St., erect brick veneer duplex and garage, 4709-11 Chenevert St.; 12 rooms.

Tex., Luling—E. B. McKean erect tile and stucco residence; 2 stories, 8 rooms, 2 baths; Herff & Jones, Archts., San Antonio Loan & Tr. Bldg., San Antonio.

Va., Covington—Industrial Rayon Corp. plans 110 additional dwellings.

W. Va., Charleston—St. Johns P. E. Church, 1105 Quarrier St., receiving bids for \$20,000 rectory, Linden Ave., South Hills; brick, stucco and half timber, 3 baths, slate roof, 2-car garage; Wyszog & Bengston, Archts., Professional Bldg.

Government and State

Ala., Montgomery—Constructing Quartermaster, Maxwell Field, Capt. M. A. McFadden, soon call for bids for \$110,000 barrack bldg.; also for four 110x240-ft. hangars.

Ark., El Dorado—Additional contractors estimating on post office and court house, bids Aug. 28 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.; W. B. Smith, El Dorado; W. R. Grimschaw Co., Kennedy Bldg., Tulsa, Okla.; L. H. Lacy Co., Burt Bldg., Dallas, Tex.; Wm. Petersen, Donaghey Bldg., Little Rock, Ark.; McClintic-Marshall Co., Telephone Bldg., St. Louis, Mo.; Samford Bros., 301 Washington Ave., Montgomery, Ala.; Chas. Weitz Sons, 713 Mulberry St., Des Moines, Iowa; Field-Martin Co., 720 S. Sixth St., Minneapolis, Minn.

D. C., Washington—Architect of The Capitol, David Lynn, will advertise for bids Sept. 1 to be opened Oct. 1, for \$7,500,000 office bldg. for House of Representatives; marble, plans by Allied Architects of Washington, Inc., 16 Jackson Place, N. W.; T. N. Marshall, Struct. Engr., 1341 Connecticut Ave., N. W.; G. A. Weschler, Mech. Engr., 16 Jackson Place; contract previously let for foundation.

Mo., Jefferson City—State, Henry C. Caulfield, Gov., has broken ground for \$750,000 intermediate reformatory, Algoa; Wm. B. Ittner, Archt., Bd. of Education Bldg., St. Louis.

N. C., Fort Bragg—Constructing Quartermaster, Capt. Lawrence L. Simpson, has low bid at \$453,000 from C. V. York, Odd Fellows Bldg., Raleigh, 16 non-commissioned officers' quarters, 8 field officers' quarters and 26 company officers' quarters.

N. C., Raleigh—Bd. of Directors of State Prison Farm, Caledonia, Wilbur Dunn, Act. Chmn., Raleigh, erect chapel and assembly hall; plans to be given by W. H. Deltrick, Professional Bldg., Raleigh.

Okla., Sapulpa—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Aug. 22 (lately noted Aug. 12) for site for \$150,000 post office.

Okla., Tulsa—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., receives bids Sept. 16 for \$1,000,000 Federal bldg. (except elevators), S. Boulder Ave.; drawings from office Supvg. Archt.

Tenn., Jackson—National Guard has sketch by J. H. Parmelee, American Trust Bldg., Nashville, for \$150,000 armory.

S. C., Dillon—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., erect \$60,000 post office.

Tex., Fort Bliss, El Paso—War Dept., Washington, D. C., plans to acquire about 1600 additional acres near Fort Bliss; new constr., reported, includes barracks, stables, gun sheds, warehouses, officers' quarters, non-commissioned officers' quarters, water storage tanks, etc.

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, rejected bids for 2 bachelor officers' quarters, \$150,000 each, and bachelor officers' dining hall, \$80,000; revise plans and call new bids; Phelps & Dewees, Archts., Gunter Bldg.; W. E. Simpson & Co., Engrs., Milam Bldg., both San Antonio.

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, rejected bids for post exchange; revise plans and call new bids; masonry, Spanish or Mission type, 1 story, 180x250 ft.; cold storage plant, stores, garage and filling station; Robt. G. Kelly, Archt., Milam Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio; revising plans for sewage disposal plant.

Va., Richmond—State, Frank Bane, Commr. of Public Welfare, erect first unit of new State Industrial Farm for Women; accommodate 40 or 60.

Va., Roanoke—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$423,294 from Worsham Bros., Empire Bldg., Knoxville, Tenn., for post office, custom house, etc.

Hospitals, Sanitariums, Etc.

Ala., Tuscaloosa—United States Veterans Bureau, L. H. Tripp, Chn., Constr. Div., Arlington Bldg., Washington, D. C., will locate \$1,100,000 U. S. Veterans Hospital either in or near Tuscaloosa. 1-2 under D. C., Washington.

Ga., Atlanta—Home for Incurables, 305 Boulevard, S. E., receives bids Aug. 26 for additions and alterations to A. G. Rhodes Memorial; face brick, hollow tile, struct. steel, 2 stories and basement, conc. footings, Celotex, hardwood, tile and terrazzo floors, interior marble trim, Buckingham Virginia slate roof, call system; E. C. Wachendorf, Archt., Standard Bldg.; following contractors estimating: Gilbert Beers; Geo. A. Clayton Co.; J. S. McCauley Co., all Bona Allen Bldg.; Brazell & Miller, Norris Bldg.; Pittman Construction Co., Rhodes Bldg.

Ga., Atlanta—Henrietta Eggleston Memorial Hospital, W. R. Prestcott, Chmn., Bd. of Trustees, receives bids Aug. 30 for nurses' home; brick, 2 stories and basement, 75x46 ft. and 20x45 ft., stucco and hollow tile, or clinker block and stone tile, conc. footings, orna. cast iron, wrought iron, steel, cement and tile floors, steel toilet partitions; Morgan, Dillon & Lewis, Archts., Grant Bldg.; following contractors estimating: George A. Clayton Co.; J. S. McCauley Co.; Shelverton Construction Co.; Gilbert Beers, all Bona Allen Bldg.; Grahn Construction Co.; Christian & Bell, both Red Rock Bldg.; Brazell & Miller, Norris Bldg.; W. H. Hiers, 1497 Westwood Ave., S. W.

Ga., Milledgeville—Dr. Richard Binion erect fireproof hospital; 2 bldgs. connected by corridors; 48 beds; brick, conc. foundations, hardwood, tile and comp floors, comp. roof; John Hutchinson, Contr.; probably start work Sept. 1.

Ky., Ashland—Kings Daughters Hospital, Ben Williamson, Sr., member, Bldg. Comm., probably start work about Sept. 1 on \$100,000 addition.

La., Monroe—Following contractors estimating on \$40,000 municipal hospital, bids Aug. 26 by City Council: Lee Ellis, Old Central Bk. Bldg.; W. C. Salley, Ouachita Bank Bldg.; Frank Masling, 1510 S. Grand St.; W. H. Blane, all Monroe; L. D. Davis, West Monroe; A. G. McBridge, 319 W. Hickory St.; Miles Davis; W. F. Rogers, all Bastrop; Tudor & Ratcliff, Commercial Bk. Bldg., Alexandria; E. E. Rabalais & Son, Bunkie; Ashton-Glassell Co., Inc., 260 Cadillac St., Shreveport; Chas. Stubner, Balter Bldg., New Orleans; J. W. Smith & Associates, Archts., Ouachita Natl. Bk. Bldg., Monroe.

Okla., Norman—State Bd. of Public Affairs, Oklahoma City, has low bid at \$137,890 from Richter & Lall, Pauls Valley, for receiving and ward bldg., Central Oklahoma Hospital for Insane.

Okla., Oklahoma City—Capitol Hill Hospital, J. W. Moore, remodel and erect addition; \$20,000; probably start work in September.

Tex., New Braunfels—Southland Nature Cure Sanatorium, Inc., Dr. R. C. Reynolds, plans fireproof sanatorium; 1 and 2 stories; Harvey P. Smith, Archt., Natl. Bk. of Commerce Bldg., San Antonio.

Tex., San Antonio—State Bd. of Control, Austin, opens bids Aug. 25 for supt.'s residence, San Antonio State Hospital; brick, tile and conc., 2 stories; oak floors, conc. foundation, clay tile roof; Leo M. J. Dielman, Archt., 306 E. Commerce St., San Antonio.

Hotels and Apartments

D. C., Washington—Harry A. Kite, Inc., 1019 15th St., N. W., has permit for five 2-story, brick flats, 1012-20 Seventeenth Place, N. E.; \$35,000.

Fla., Miami Beach—Martha Meyer has permit for \$25,000, 8-apartment, 4th St. and Meridian Ave.; V. H. Nellenbogen, Archt., 925 Lincoln Road.

Fla., Tampa—Penn-Florida Hotels Corp., Miami, E. M. Love, Pres., Pittsburgh, Pa., purchased 400-room Bayshore Royal Hotel, Bayshore Blvd. and Howard Ave., and remodel.

Mo., Kansas City—Miss Alice P. Arnold, 4919 Troost St., has permit for \$20,000 apartment, 3136 Grand Ave.

Okla., Chickasha—General Hotels Corp., reported, erect \$500,000, 10-story hotel.

Okla., Guymon—Chamber of Commerce promoting erection of \$140,000, 5-story, 60x100-ft., brick, 60-room hotel; Ellis Charles, Archt., Wichita, Kans.

Okla., Norman—Chamber of Commerce promoting erection of hotel; Walter W. Kraft, Chmn., Hotel Comm.

Okla., Oklahoma City—J. H. Maxey, 2415 W. 19th St., erect 75,000, 3-story, 50x150 ft., brick, stone and conc. hotel.

Okla., Oklahoma City—George W. Gray, 437 W. Fifth St., having plans prepared by L. R. Langbein, Hightower Bldg., for 28-apartment, 58 Broadway Circle; Spanish type automatic elevator, electric refrigeration, Murphy in-a-door beds, domestic science kitchens.

S. C., Columbia—Mrs. Della R. Coulter has permit for brick veneer, 4-apartment, 131 S. Pickens St.

Tenn., Memphis—W. C. Lester, Archt., Derron Bldg., recently reported preparing plans for \$800,000, 12-story apartment hotel, Orleans and Jefferson Ave., for C. W. Hoisington, advises that proposition will not develop before next year.

Tenn., Memphis—Union Avenue Investment Corp., J. E. Vinsohn, Pres., Farnsworth Bldg., reported, having plans prepared by Polk W. Agee, Fidelity Bank Bldg., for \$1,000,000, 13-story, 125x126 ft., brick, rein. conc. and orna. stone, 196-apartment hotel on Union Ave.; comp. built-up roof, steam heat, hardwood floors; Leslie B. Huffman, Asso. Archt., Fidelity Bank Bldg.

Miscellaneous

D. C., Washington—Washington Convention Hall Market Co., Inc., has permit for \$35,000, 1-story, conc. and brick addition to market building, Fifth and L Sts.

Mo., O'Fallon—St. Mary's Institute, Sisters of the Precious Blood, Sister Wilhelmina, Superior, receives bids Aug. 27 for 1-story, 144x33 ft. and 3-story, 158x57 ft., additions to convent; brick and rein. conc., fireproof; O'Meara & Hills, Archt., Arcade Bldg., St. Louis.

Tex., Denton—Denton County Agricultural Fair Assn., Dr. Jack Skiles, Pres., erect 100x180 ft. livestock building, convert 30x60 ft. building into larger poultry building, insert shelves and fixtures in 72x133 ft. building for agricultural and womens building, construct man-proof fence around grounds, drainage and terracing of grounds; plans by E. N. Noyes, Engr.; future buildings include womens' building, poultry building, merchants' and community exhibition building, swine building and other exhibit buildings.

Tex., Fort Worth—R. H. Wolfe, Tillar, Ark., Chmn., Bd. of Trustees to establish orphanage provided by will of late J. Garland Tillar, who left estate of \$250,000 as an endowment to create the institution.

Railway Stations, Sheds, Etc.

N. C., Raleigh — Seaboard Air Line Ry., W. D. Faucette, Ch. Engr., Savannah, Ga., Southern Ry. Co., G. L. Sitton, Ch. Engr., Lines East, M. W. & S., Charlotte, and Norfolk Southern R. R. Co., F. L. Nicholson, Ch. Engr., Norfolk, Va., remodel union station.

Schools

Ala., Birmingham—Gulf States Steel Co., Brown-Marx Bldg., soon let contract for 2-story and basement, 29x60 ft., brick and stucco school house and lodge building.

Ark., Brinkley—Brinkley Special School Dist., Elmo Chaney, Pres., ready for bids for \$16,000, 1-story, 110x80 ft., brick gymnasium; Wittenberg & Deloney, Archts., Home Insurance Bldg., Little Rock. 8-7

Ark., Leola—Leola Special School Dist. erect 1-story, brick veneer, 6-classroom high school; plans by State Dept. Bd. of Education, Little Rock.

Ark., Morrow—Morrow School Dist. Trustees plan \$10,000 school; 6 rooms and auditorium; O. W. Bass, Washington County Bd. of Education, Fayetteville.

Ark., Paron—Paron Special School Dist., care W. A. Jackson, Saline County Supt. of Schools, Benton, erect \$10,000, 1-story, brick veneer school; plans by State Supt. of Education, Little Rock.

Ga., Moniac—Moniac Consolidated School Dist. Trustees erect community school; \$11,000 bonds voted.

Ky., Paducah—West Kentucky Industrial College having plans prepared by G. Tandy Smith, Guthrie, Bldg., for \$75,000 administration building; brick, steel, stone and conc.

La., DeRidder—Beauregard Parish School; Bd. plans school to replace burned structure; election Sept. 16 on bonds.

La., New Orleans—Orleans Parish School Bd. ready for bids in about 60 days for 3-story, brick, stone trim Palmer School on Clouet St., between Villere and Urquhart Sts.; 29 classrooms, domestic science dept., kindergarten, kitchen and boiler room; built-up comp. roof, wood floors; E. A. Christy, Supvg. Archt., City Hall Annex.

La., New Orleans—Orleans Parish School Bd., A. J. Tete, Sec., ready for bids in few days for \$500,000, 3-story, rein. conc., brick and stucco trim Academic High School for Girls; auditorium to seat 1500 pupils; E. A. Christy, Supvg. Archt., City Hall Annex. 7-24

La., New Orleans—North American Synod of Lutheran Church at conference in Quincy, Ill., appropriated \$18,000 for improvements to negro mission schools in New Orleans; \$8000 for building Concordia School, Kohn St. and Holly Grove, Rev. C. M. Kramer, Pastor of Bethlehem Mission; \$5000 for repairing Bethlehem chapel, Washington Ave. and Dryades St.; \$5000 for renovating Lutheran Preparatory School, Arnette and Derbigny Sts.

Md., Baltimore — Public Improvement Comsn., H. J. Leimbach, Supvg. Engr., ready for bids about Aug. 26 for School No. 84, Johnson and Heath Sts.; E. H. Glidden, Archt., 18 E. Lexington St.; ready for bids about Sept. 1 for addition to School No. 53, 26th and St. Paul Sts.; Bernard Evander, Archt., 18 E. Lexington St.; also ready for bids about Sept. 15 for administration building for School Bd., 25th St. between Charles and St. Paul Sts.; L. R. White, Archt., Court Square Bldg. 6-26, 3-27 and 2-20

Miss., Hattiesburg—Forrest County Bd. of Supervisors called election Sept. 3 in Eatonville Consolidated School Dist. on \$10,000 bonds to erect, repair, enlarge and remodel present schools.

Miss., Hattiesburg—Mississippi State Building Comsn., State Capitol Bldg., Jackson, receives bids Sept. 4 for general repairs in 7 buildings at State Teachers College; plans from Vinson B. Smith, Jr., Archt., Natl. Bank of Gulfport, Gulfport. 7-3

Miss., Prentiss—Mississippi College raising fund of \$105,000 for alumni building.

Miss., Shaw — Shaw Consolidated School Trustees, W. H. Brown, Sec., receives bids Aug. 22 for gymnasium; L. W. Lathrop, Archt.

Miss., Tchula—Tchula Special School Dist. Trustees having plans prepared by Hull & Malvaney, Merchants Bank Bldg., Jackson, for additions and alterations to school; brick; \$30,000 bonds recently voted. 8-14

Miss., West—School Bd., W. L. Wright, Sec., receives bids Aug. 29 for school.

Mo., North Kansas City, Kansas City—St. Patrick's Catholic Parish, Rev. W. F.

Gott, plans 2 additional stories to 1-story building, 24th and Charlotte Sts., for educational purposes; fireproof; Madorie & Bihr, Archts., Natl. Fidelity Life Bldg.

Mo., St. Joseph—Bd. of Education, A. L. Loving, Sec., soon ready for bids for Hyde School in South St. Joseph; also for Ernst-Krug School, to be known hereafter as Charles A. Lindbergh School; Webb Selmens, First Natl. Bank Bldg., Archt. for latter structure; Wm. B. Ittner, Inc., Supvg. Archt., Bd. of Education Bldg., St. Louis. 2-13

N. C., Asheville—Sand Hill School Dist. voted \$50,000 bonds for 8-room elementary school at Enka and addition of cafeteria, gymnasium and classrooms to Sand Hill school; W. J. East, County Archt. 7-17

N. C., Greensboro—Immanuel College, Dr. Henry Nau, Pres., has \$40,000 appropriation from Lutheran North American Synodical Conference, Quincy, Ill., for improvements to administration building; Harry Barton, Archt., Jefferson Bldg.

N. C., Concord—Lutheran North American Synodical Conference, Quincy, Ill., appropriated \$25,000 for negro mission at Concord; \$12,000 for negro mission at High Point.

N. C., Winston-Salem—Harold Macklin, Archt., Realty Bldg., advises that he has not been retained to prepare plans for \$500,000 high school as recently reported. 8-14

Okla., Crescent—Bd. of Education, Roy Holliday, Clk., rejected bids and probably call for new bids for \$25,000, brick, stone and rein. conc. school; P. H. Weathers, Archt., Oil Exch. Bldg., Oklahoma City. 7-24

Okla., Geary—Bd. of Education, Mrs. M. E. Stansberry, Clk., having plans revised and soon call for new bids for \$20,000 addition to high school; Tonini & Bramblett, Archts., 416½ W. Main St., Oklahoma City. 7-10

Okla., Oklahoma City—School Bd. of School Dist. No. 60 (Valley Brook), N. L. Peterson, Clk., receives bids Aug. 23 for school; plans from office Oklahoma County Supt. of Education.

Okla., Stillwater — Agricultural and Mechanical College, Dr. H. G. Bennett, Pres., having preliminary plans prepared by Philip A. Wilbur, care College, for proposed \$500,000 conc. stadium and field house.

Okla., Tecumseh—Bd. of Education, W. D. Fox, Clk., has plans by Albert S. Ross, Ada, for \$25,000, 1-story, brick and stone school.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Miss., Morton—City Council and Ancient Free and Accepted Masons let contract at \$10,800 to Jones & Lindsey, Jackson, for city hall-lodge bldg.; brick, 3 stories, 76x29 ft., wood floors, comp. roof, conc. foundations; J. M. Spain, Archt., Merchants Bk. Bldg., Jackson. 8-14

Bank and Office

Ga., Augusta—Sibley Manufacturing Co., Goodrich, let contract at \$10,000 to Branch & Smith, 326 Walker St., to remodel interior of office bldg.; Scroggs & Ewing, Archts., S. F. C. Bldg. 7-31

Ga., Augusta—Georgia Power Co. remodel second floor of bldg. for offices and assembly room; Allied Engineers, Inc., Contrs., both Gas & Elect. Bldg., Atlanta.

Md., Baltimore—Realty Improvement Co., 336 N. Charles St., let contract to Minter Homes Corp., 340 Third Ave., Huntington, W. Va., and Dunkirk Apts. Bldg., Dundalk, Baltimore, for bank and office bldg., Eastern and Elwood Aves.; brick and stone, 2 stories, 40x70 ft.; Howard F. Baldwin, Archt., 328 N. Charles. 7-31

Md., Baltimore—Union Trust Co. remodeling interior, Baltimore and St. Paul Sts.; Smith & May, Archts., Baltimore Trust Bldg.; Consolidated Engineering Co., Inc., Contr., 20 E. Franklin St.

Mo., Rolla—National Bank, John Barnitz, Pres., let contract to M. E. Gillioz, Monett, for \$150,000 bank and hotel bldg.; hotel to be operated by Hotel Ozarks Co., Springfield, Mo.; contain 62 rooms, 59 baths, elevator; structure brick and rein. conc., 4 stories and basement, 100x150 ft., marble, tile and terrazzo work, steam heat; Johnson & Maack, Archts., Chemical Bldg., St. Louis. 7-24

S. C., Greenville—School Bd., Charles S. Minor, Jr., Bus. Mgr., erect \$30,000 negro vocational school.

S. C., Paris, R. D. from Greenville—Paris School Dist. Trustees erect \$12,000 gymnasium and auditorium.

Tex., College Station—Agricultural and Mechanical College having plans prepared for two additional dormitories; Dr. F. E. Giescke, College Archt.

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., receives bids September 10 for \$1,000,000, Spanish type, brick and rein. conc. Senior High School, Spanish Acres; 2 and 3 stories with 1-story wings for cafeteria and gymnasium, cast stone trim, tile roof, 2000 student capacity; Adams & Adams, Archts., Real Estate Bldg.; W. E. Simpson Co., Engr., Milam Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 7-3

Tex., San Antonio — Bd. of Education, Dr. J. A. McIntosh, Pres., plans elementary school, Rio Grande and Rosary Sts.

Stores

Mo., Kansas City—Lawrence Gray, Pioneer Trust Bldg., has permit for \$15,000 store, 2548-50 McGee St.

Tex., Austin—Philip Bosche erect \$15,000, 2-story, brick building, 804-6 Congress Ave.

Tex., Fort Worth — P. M. Devitt, 3867 Tulsa St., having preliminary plans prepared by Wyatt C. Hedrick, Inc., First Natl. Bank Bldg., for store on Lamar St.

Tex., Houston—Loftis Bros. & Co., Edward Eberhart, Local Mgr., 505 Main St., remodel building, 710 Main St., for jewelry store.

Va., Richmond—Sydnor & Hundley, Inc., George B. Sydnor, Jr., Pres., Grace and Seventh Sts., erect 6 or 7-story store, Grace St., between First and Second Sts.

Theatres

Okla., Enid—G. E. Blumenauer, Archt., Masonic Bldg., preparing plans for \$780,000, 17-story, 125x200 ft., brick, rein. conc. and stone theater and commercial building; take bids in Fall.

Warehouses

Miss., Clarksdale—Van W. Rogers erect 30x26 ft., galvanized iron and stucco building, 640 Sunflower Ave.

N. C., Asheville—Chamber of Commerce, in conjunction with Western Carolina Tobacco Warehouse Corp., plans warehouse, Valley St. and Biltmore Ave.

Okla., Enid—Following sub-contracts let on \$500,000 store and office bldg., Maple and Independence Sts., for Enid Building & Investment Co.; Wiring, Starrs Electrical Co.; brick, Acme Brick Co.; steel, Hackney Iron & Steel Co., all Enid; metal windows, Pomeroy Window Co., New York; stone, Lusco Brick & Stone Co., Wichita, Kan.; granite, Cold Spring Granite Co., Cold Spring, Minn.; elevators, Otis Elevator Co., 222 W. Second St., Oklahoma City, Okla.; Roy Shaw, Archt.; D. C. Bass & Sons Construction Co., Contr., both Enid. 5-15

Okla., Oklahoma City—First National Bank & Trust Co., Frank P. Johnson, Pres., let contract to John J. Kirsch Co., Okla. Savings & Loan Bldg., to raze bldgs. on site of 32-story bank and office bldg.; plans probably ready latter part Oct. and bids asked; to let separate contract for excavation, foundation and retaining walls in meantime; steel and rein. conc.; Weary & Alford, Archts., 1923 Calumet Ave., Chicago, Ill. 8-14

Tex., Dallas—Mosher Steel & Machinery Co., 5209 Maple St., reported, has contract for 1327 tons fabricated struct. steel for \$1,500,000 Tower Petroleum Bldg., for McNeny & McNeny, Athletic Bldg.; Mark Lemon, Archt., Constr. Industries Bldg.; Henger & Chambers Co., Contr., Dallas, Natl. Bank Bldg. 6-19

Tex., Dallas—Dallas Gas Co., 2016 Jackson St., reported, let contract for 1000 tons struct. steel to Mosher Steel & Machinery Co., 5209 Maple St.; Lang & Witchell, Archts., First Natl. Bk. Bldg.; Gardner & Howe, Struct. Engrs., Kirby Bldg. 7-31

Tex., New Braunfels—First National Bank let contract at \$48,300 to Walsh, Burney & Key, Inc., 928 N. Flores St., San Antonio, for stone bldg.; conc. and steel frame, 1 story with provision for 4 additional stories, 50x80 ft., conc. foundation, cast stone, tile

coping, cement, terrazzo, tile and comp. floors, metal lath and plaster; Giesecke & Harris, Archts., Norwood Bldg., Austin; L. D. Royer, Mech. Engr., Smith-Young Tower, San Antonio. 8-7

Churches

Ga., Emory University—Farrell Heating & Plumbing Co., 248 Ivy St., N. E., has heating contract for \$250,000 Glenn Memorial Church for Emory University; wiring, Walker Electrical Co.; Hentz, Adler & Shutze, Archts., Candler Bldg.; Norwood Griffin, Contr., Bona Allen Bldg., all Atlanta. 7-24

Md., Easton—Ebenezer Methodist Church expending \$20,000 to remodel and enlarge auditorium and Sunday school.

Miss., Indianola—First Baptist Church let contract at about \$24,000 to Dan Horn, Indianola, for rein. conc., brick and stone trim Sunday school addition; 3 stories and basement, 60x75 ft., steel and iron work, conc. and wood floors, sheet metal work, Regan & Weller, Archts., Dermon Bldg., Memphis, Tenn. 7-31

Miss., Indianola—First Presbyterian Church let contract at \$29,850 to Chastang Construction Co., Jackson, Miss., for stone and stucco bldg.; 1 and 2 stories and basement, 60x100 ft., conc. and wood floors, comp. built-up roof; Regan & Weller, Archts., Dermon Bldg., Memphis, Tenn. 8-7

Mo., Kansas City—Budd Park Christian Church started work on 3-story addition, St. John and Belmont Aves.; \$25,000, brick and stone; auditorium-gymnasium; classrooms; Harvey Campbell, Archt. 8-7

Tex., Liberty—First Methodist Church completed foundation for \$30,000 bldg.; brick and brick veneer, 2 stories, 75x82.6 ft., conc. and long leaf yellow pine floors, asbestos shingle roof; F. W. & D. E. Steinman, Archts., San Jacinto Bldg., Beaumont; R. E. Meekins & Son, Contrs., Trinity. See Want Section—Building Material and Equipment. 8-7

Tex., San Antonio—Riverside Park Baptist Church, S. Presa St., erect \$17,000 addition; brick and tile, 2 stories, 49x90 ft.; D. B. Lillie, Contr., 108 Haynes St. 8-7

City and County

Ark., DeQueen—Hope Brick Co., Hope, has brick contract at \$9260 for \$110,000 Sevier County courthouse and jail; Witt, Seibert & Halsey, Archts.-Engrs.; Hardy Bros. Construction Co., Contr., both Texarkana, Ark.-Tex. 8-14

Md., Rockville—Dietrich Bros., 220 Pleasant St., Baltimore, have contract for 210 tons struct. steel for \$425,000 Montgomery County courthouse and jail; Smith & Edwards, Archts., 1707 I St., N. W., Washington, D. C.; J. J. McDevitt Co., Contr., Bldrs. Bldg., Charlotte, N. C. 8-7

N. C., Shelby—Cleveland County Commrs., A. E. Cline, Chmn., let contract at \$6500 to Lutz & Webb for 8-room addition to main bldg., Cleveland County Home for Aged and Infirm; contract at \$5869 to Roberts & Evans for 6-room bldg. for colored and 4-room storage building. 7-24

Okl., Muskogee—City, W. H. Cavanaugh, Clk., let contract to supervise erection of \$250,000 city hall to Manhattan Construction Co., Manhattan Bldg., Muskogee; brick, rein. conc. and stone, 3 stories, 140x202 ft., wood, tile, conc. and terrazzo floors, comp. roof; Layton, Hicks & Forsyth, Archts., Braniff Bldg., Oklahoma City; L. L. Howenstine, Manhattan Bldg., and H. H. Nieman, Barnes Bldg., Asso. Archts., Muskogee. 7-17

Tenn., Knoxville—City let contract at \$22,777 to W. A. & J. E. Gervin, 220 W. Clinch Ave., for Park City Branch Library; fireproof, brick; Baumann & Baumann, Archts., 813½ Market St. 7-31

Dwellings

Ala., Birmingham—Richard Randolph, 5 N. 21st St., erect brick veneer residence, Country Club Garden; 1 story, 68x50 ft., 2 tile baths, asbestos shingle roof, steam heat; Sam C. Molloy, Archt., Protective Life Bldg.; F. E. Dunlap, Contr., 1010 S. 11th Ave. 7-31

Ala., Brighton, Bessemer—Ben C. Willson let contract to D. H. Marbury, 4006½ S. Ninth St., for residence; frame, 1 story and basement; Sam C. Molloy, Archt., Protective Life Bldg., both Birmingham. 7-31

Ala., Tuscaloosa—A. C. Cade, Jr., 904 20th Ave., let contract to C. C. Lawrence, Tuscaloosa, for residence, Country Club Heights; brick veneer, cast stone or stone trim, 1½ stories, comp. roof, furnace; Miller & Martin, Archts., Title Guar. Bldg., Birmingham. 7-31

D. C., Washington—W. C. & A. N. Miller, 1119 17th St., N. W., have permit for \$13,000 dwelling, 4355 Forest Lane, N. W.; 2½ stories, brick; owners build.

Fla., Clearwater—John Phillipoff has contract for \$20,000 residence, Druid Rd., East-over subdivision; Italian type, 2 stories, brick and hollow tile; Jonsberg & Wakeling, Archts., Times Bldg., St. Petersburg. 6-26

Fla., Miami Beach—Jared B. Gage, care B. Kingston Hall, Archt., 125 Sixth St., let contract to James Betteridge Co., Inc., for \$25,000 residence, 5728 Pine Tree Drive; stucco, conc. block and rein. conc. foundation, tile roof. 6-26

Ga., Atlanta—J. T. Williams, 713 Atlanta Tr. Bldg., erect brick veneer residence, 45 Maddox Drive, N. E.; 2 stories and basement, hardwood and tile floors, comp. roof, conc. footings; day labor. 6-26

Ga., Atlanta—J. H. Hightower, 621 Ridge Crest Rd., erect 2 frame dwellings, 267 Houston St., N. E., and 270 Grays Alley, N. E.; comp. roof; day labor. 6-26

Ga., Atlanta—L. H. Flury, 1029 Woodland Ave., S. E., erect brick veneer residence; comp. rofo; day labor. 6-26

La., New Orleans—Nat W. Gold, 3515 Dumaine St., erect duplex, 3610 Dumaine; built-up roof, sheet metal work, tile work. 6-26

La., New Orleans—Edgar B. Stern remodel residence, 5 Metairie Lane; \$16,500; erect brick and frame outbuilding; \$12,000; Moise H. Goldstein, Archt., American Bank Bldg.; John A. O'Brien, Contr., Louisiana Bldg. 6-26

La., New Orleans—H. M. Johnson, Contr., 2509 Sage St., erect double dwelling, 2503-05 Sage; brick work, comp. roof, sheet metal work. 6-26

La., New Orleans—C. A. Tricou, 618 N. Bernadotte St., erect single residence, 5624 Woodlawn St.; asbestos roof; N. Ascani, Contr., 5878 Canal Bldg. 6-26

Md., Baltimore—R. B. Construction Co., 112 W. Lexington St., erect 20 dwellings, Spaulding Ave. near Palmer Ave.; brick, 2 stories, 8 rooms, 2 baths; \$125,000. 6-26

Md., Baltimore—J. Hurst Purnell, Inc., 4314 St. Paul St., erect 8 brick dwellings, 400 block Wingate Rd., Keswick; 7 to 9 rooms, 1 and 2 baths; \$28,000; owner builds. 6-26

Md., Baltimore—Geo. W. Schoenhals & Co., Munsey Bldg., erect 20 porch front dwelling, Harford Ave. near Rosalie Ave.; brick, 2 stories, 6 rooms; owner builds. 6-26

Md., Baltimore—Otto F. Unger erect 5 frame dwellings and garages, 4001-11 Biddison Ave.; 2 stories, 18x30 ft., hot air heat; \$18,000; Unger & Gerland, Inc., Archts.-Contrs., both 4104 Harford Ave. 6-26

Md., Baltimore—J. Hurst Purnell, 4314 St. Paul St., erect 8 brick dwellings and garages, 401-11 Wingate Rd.; 2 stories, 25x35 ft. and 10x18 ft., slate roofs; \$28,000; Geo. Wessel, Archt., 601 W. 40th St.; owner builds. 6-26

Mo., St. Louis—O. K. Investment Co., 8300 Kingshighway, N. W., erect 3 dwellings, 8750-58 Oriole St.; brick, 1 story, 30x42 ft., comp. roofs, hot air heat; \$15,000; owner builds. 6-26

Mo., St. Louis—J. W. Waters, 4301 Easton Ave., erect \$10,000 residence, Sappington Rd.; frame, 1 story and basement, 55x26 ft., hardwood floors, tile bath, comp. shingle roof; work by sub-contract. 6-26

Mo., St. Louis—Rallo & Brugnone, 4650 Page Bldg., have contract for brick dwelling, St. Louis Hills; 2 stories and basement, 28 x38 ft., conc. foundation, slate roof; Angelo B. M. Corrubia, Archt., Arcade Bldg. 6-26

Mo., St. Louis—Miss Hecker, care Frank McClinton, Contr., 1340 Ferguson Ave., erect brick residence, Conway Rd.; 2 stories and basement, about 60x35 ft.; Geo. R. Bartling, Inc., Archt., Paul Brown Bldg.; Robt. Francis Denny, Asso. Archt., Paul Brown Bldg. 6-26

Mo., St. Louis—Frank Burgess, 7128 Natural Bridge Rd., erect 3 brick dwellings, Shirley Terrace; 1 story and basement, 26x30 ft., hardwood floors, tile baths, comp. shingle roofs, hot air heat; work by sub-contract. 6-26

Mo., St. Louis—R. J. Noonon, 8800 Kingshighway, N. W., erect \$10,000 dwelling, 1431 Veronica Ave.; brick, 2 stories and basement, 27x46 ft., hardwood floors, tile bath, comp. shingle roof, hot air heat; work by sub-contract. 6-26

Mo., St. Louis—Oscar C. Koelle, care E. A. Brunson Construction Co., 1976 Ry. Exch. Bldg., erect brick residence, Stratford Ave., Alfa Dena; 2 stories and basement, 34x35 ft.; Klipstein & Rathman, Archts., 316 N. Eighth St. 6-26

Mo., St. Louis—W. C. Sloan, 5535 Pershing Ave., erect \$10,000 residence, 6243 Delor St.; brick, 2 stories and basement, 31x37 ft., hardwood floors, tile bath, slate roof, hot air heat; Angelo B. M. Corrubia, Archt., Arcade Bldg.; Rallo & Brugnone, Contrs., 4650 Page St. 6-26

Okl., Tulsa—Hanna Corp., 401 S. Peoria St., started work on stone bungalow, 19th St. and Evanston Ave., Hickory Manor. 6-26

Okl., Tulsa—Hickory Manor Improvement Co., Box 812, started work on \$10,000 dwell-

ing, 19th and Evanston Sts.; stone, 1½ stories, 44x40 ft., oak floors, conc. foundation, shingle roof; E. Palmer Potter, Archt., care Hanna Corp., 401 S. Peoria St.; Hanna Construction Co., Contr. 8-14

S. C., Columbia—Mrs. Della C. Nichols, erecting \$30,000 residence, Myrtle Rd., Heathwood; stone, 7 rooms. 8-14

Tenn., Lookout Mountain—J. B. Pound, erect 3 dwellings; sell for \$25,000 each; plans and constr. by Collins Bros., 4611 Tennessee Ave., Chattanooga. 3-27

Tenn., Memphis—O. E. Bass, 1610 Poplar Ave., erect \$10,000 residence, 2229 Jefferson Ave.; brick veneer, 1 story, 36x75 ft., oak floors, tile baths, tile roof, gas heat; owner builds. 3-27

Tenn., Nashville—John G. Weber, 1305 18th Ave., South, erect brick, stone and conc. residence; 1 story and basement, 44x51 ft., with 20x21-ft. wing; Tisdale & Pinson, Archts., Ind. Life Bldg.; Bryer & White, Contrs., 311 Church St. 3-27

Tex., Galveston—Geo. Sealy, 2424 J St., started work on Spanish type residence near Fort Crockett; 2 stories; landscaping. 3-27

Tex., Gonzales—Geo. Seydler, care Robertson & Seydler, erect 6-room stucco residence; Fred Weisenfelder, Contr. 3-27

Tex., Houston—Dr. B. F. Smith, Medical Arts Bldg., let contract to T. J. Portele, 1626 Arlington St., for \$12,000 residence, Chelsea Blvd.; brick veneer, 2 stories, 10 rooms; A. Delsile, Archt., 314 West Bldg. 3-27

Tex., San Benito—John O. Prentiss started work on Spanish type residence, N. Sam Houston Blvd.; 7 rooms; Lloyd C. Mellor, Archt., Harlingen; W. P. Mallory, Contr., San Benito. 3-27

Government and State

Ala., Montgomery—Constructing Quartermaster, Maxwell Field, let contract at \$98,870 to Ogletree Construction Co., 11th St., Anniston, for Air Corps tactical school; struc. steel, encased, 3 stories, 120x41 ft. and 80x40 ft., conc. floors and foundation, tile roof. See Want Section—Building Material and Equipment. 8-14

Ala., Union Springs—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract to J. A. Wallis, Inc., Clark Bldg., Birmingham, Ala., at \$35,694, for post office; brick and tile, 1 and 1½ stories and basement, 43x72 ft., wood and terrazzo floors, conc. foundation, tar and gravel roof. 8-7

Ga., Fort Benning—Constructing Quartermaster, Lieut. W. M. Allison, let contract at \$52,300 to Batson-Cook Co., West Point, for dispensary; brick, rein. conc., Indiana limestone trim, cast stone, tile and comp. roof, 2 stories and basement, 90x38 ft. 8-14

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., let contract at \$258,800 to Batson-Cook Co., West Point, Ga., for quarantine station; brick, stone trim, 1 and 2 stories and basement. 8-14

Tenn., Newport—Ben A. Click, Newport, has contract for \$40,000 Cocke County Memorial Bldg.; \$20,000 donated by State, \$20,000 by Cocke County and American Legion; Colonial type, red brick, auditorium seat 1000, banquet room, kitchen; Manley & Young, Archts., Mapelhurst Park, Knoxville. 5-22

Tex., Randolph Field—Constructing Quartermaster, Capt. A. W. Parker, let contract at \$53,280 for officers' mess hall and at \$9750 for bakery, to Brennan Co., Central Bk. Bldg., Dallas; mess hall rein. conc., hollow tile and stucco, 2 stories, tile floors, 30x80-ft. balroom, with maple floor, swimming pool, dumb waiter, lockers; Harvey P. Smith, Archt., Natl. Bk. of Commerce Bldg.; Lilly & Drought, Engrs., Frost Bldg., both San Antonio; bakery brick, struct. clay tile, stucco, cast stone and rein. conc., 1 story, 30x60 ft., tile roof, steel sash, metal lath and plaster, slate partitions, cement floors. 8-14

W. Va., Parkersburg—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., will let contract to James I. Barnes Co., Logansport, Ind., for \$200,000 post office. 8-14

Hospitals, Sanitariums, Etc.

Md., Baltimore—Board of Awards, City Hall, let contract at \$680,000 to North-Eastern Construction Co., 6 W. Madison St., for nurses' home, City hospitals; fireproof, gray Lamdin, Archts., 513 N. Charles St., Edw. L. Palmer, Jr., to supervise constr. as representative of Bureau of Buildings. 8-14

Miss., Pascagoula—Jackson County Bd. of Supvrs. let contract at \$21,334 to A. Ziegenfelder, N. & F. Hewes Bldg., Gulfport, for hospital; brick, 1 story, tile, conc. and wood floors, conc. foundation, asbestos shingle roof; furnishings, equipment, etc., \$6000; Shaw & Woleben, Archts., Gulfport. 8-7

Mo., Independence—Independence Sanitarium let contract to L. W. Weeks, 633 S. Fuller St., for \$500,000 hospital, Van Horn and Forest Sts.; fireproof, 7 stories and basement, 163x43 ft. with four 43x11-ft. wings, resilient floor covering over conc., quarry tile roof; furnishings, equipment, etc., \$70,000; Henry C. Smith, Archt., Independence Auditorium; excavation completed. See Want Section—Building Material and Equipment. 8-14

Mo., St. Louis—St. Marys Hospital, 6420 Clayton Rd., let contract to Wimmer Contracting Co., Victoria Bldg., for 6-story and basement nurses' home; brick and rein. conc., 35x125 ft., conc. foundation, cut stone, terra cotta, marble and tile work, comp. roof, 1 elevator; O'Meara & Hills, Archts., Arcade Bldg.; 175 tons rein. steel, Missouri Rolling Corp., 6800 Manchester St.

N. C., Gastonia—North Carolina Orthopaedic Hospital let contract to Geo. R. Tennent, Fairmont Park, for Benjamin N. Duke Memorial Ward; 50 beds; fireproof, 1 story, brick, stone and steel, 115x63 ft., comp. tile and clay tile floors, slate and comp. roof; \$24,000 slate roof; Hugh E. White, Archt., 207 W. Fourth Ave. See Want Section—Building Material and Equipment.

N. C., Charlotte—Good Samaritan Hospital let contract to Goode Construction Co., 11 E. Fifth St., to remodel and erect 2-story, brick nurses' home; \$55,000.

Okla., Oklahoma City—Wesley Hospital erect \$125,000 addition; brick, rein. conc. and stone, 4 stories, 45x135 ft.; Edw. Gahl, Archt., Continental Bldg.; Bellows Construction Co., Contr., Okla. Savings & Loan Bldg.; rein. steel, Capital Steel & Iron Co.; form lumber, Carley-Lombard-Young Lumber Co., 19 W. 16th St.

Tex., Houston—Southern Pacific Lines has permit for \$11,700 addition to Southern Pacific Hospital; 1, 3 and 4 stories; Woodruff Construction Co., Contr., 804 Polk St.

Hotels and Apartments

Ga., Atlanta—G. L. Crandall, 254 Peachtree St., N. E., erect \$30,000, 2-story and basement, brick veneer, 14-apartment, 208 11th St., N. E.; comp. roof, hardwood floors, steam heat; owner builds by day labor. 8-14

Mo., Kirkwood—Robert Roloff, Monroe Ave. and Kirkwood Road, started work on \$12,000, 2-story and basement, 44x33 ft. brick apartment, Jefferson St. and Kirkwood Road; comp. roof, hardwood floors, steam heat; L. E. Pierce, Contr., 411 Pitman Place.

Mo., St. Louis—I. Estlin, 3952 Potomac St., has permit for 2-story, 23x46 ft., brick tenement, 5850 Roosevelt St.; F. S. Avis, Archt., Big Bend and Clayton Ave.

Mo., St. Louis—B. A. Gross, 8836 Lawn Ave., excavating for \$12,000, 2-story and basement, 37x46 ft., brick apartment, 5048 Maffitt Ave.; comp. shingle roof, hardwood floors, hot water heat; owner, Archt.-Bldr.

Mo., St. Louis—O. J. Popp, Archt., Arcade Bldg., prepared plans for 2-story and basement, 59x28 ft., brick apartment, Keokuk and Spring St.; oak floors, stone foundation, hot water heat, slate roof; owner builds by sub-contract.

Mo., St. Louis—G. T. Ward, 378 N. Taylor Ave., excavating for 2-story and basement, 25x46 ft., brick apartment, 4983 Miami St.; stone foundation, comp. roof, hardwood floors, steam heat; owner, Archt.-Bldr.

Mo., St. Louis—Saum Brothers, 713 Chestnut St., erect 139x40 ft., brick and rein. conc., T-shape apartment, Hanley Road between Wydown and Clayton Aves.; conc. and stone foundation, hardwood floors, steam heat, electric refrigeration; owner, Archt.-Bldr.; taking bids on sub-contracts.

Mo., St. Louis—Dora Hamburg, 6231 Rosebury Ave., started work on interior and exterior improvements on 8-story and basement apartment, 725 Skinker Road; Maritz & Young, Archts., Chemical Bldg.

Mo., St. Louis—H. Kobermann has permit for two 2-story, 34x46 ft., brick tenements, 6512-18 Morganford St.; \$18,000, comp. shingle roofs, hot air heat; A. Kobermann, Archt.-Bldr., both 7242 Gravois Ave.

Mo., St. Louis—P. Warmann, 8347 Halls Ferry Road, erect \$10,000, 2-story, 35x50 ft., brick tenement, 8355-57 Halls Ferry Road; asphalt shingle roof, hot air heat; Harold C. Simon & Co., Bldrs., 4155 N. Newstead St.; J. E. Tarling, Archt., Grand and St. Louis Sts.

S. C., Columbia—Mrs. Thomas E. Hair, 2217 Blossom St., erecting \$75,000, brick, 8-apartment, 700-14 Pickens St.; J. C. Wallace & Sons, Contrs. 7-24

Tenn., Murfreesboro—C. L. Johnson erect \$60,000, brick apartment on E. Main St.; owner builds.

Miscellaneous

D. C., Washington—Japanese Government, Hon. K. Debuchi, 1500 Rhode Island Ave., will award contract to James Stewart & Co., Inc., 230 Park Ave., New York, for \$800,000, 2-story, stone and brick embassy on Massachusetts Ave., extended, N. W.; Delano & Aldrich, Archts., 126 E. 38th St., New York. 12-5

Fla., Miami Beach—John S. Collins Memorial Library & Art Assn., Dr. Joseph Adams, Pres., 18 Belle Isle St., excavating for \$60,000 library, first unit of John S. Collins Memorial Library and Art Center in Collins Park; additional wings and facilities will be built upon completion of first unit; John B. Orr Construction Co., Contr., N. E. Sixth St., Miami; Russell T. Panoast, Archt., 1139 Lincoln Road. 6-19

Miss., Oxford—Lafayette County Fair Assn. let contract to Coleman & Coleman for building at fairgrounds.

Miss., Tupelo—Mississippi-Alabama Fair Assn. let contract to Jernigan Construction Co. for agricultural hall, exhibit hall and two grandstands to replace burned structures.

Tex., Beeville—Roy Vance erect six stucco cottage camps on State Highway No. 16, first of 20 similar cottages planned.

Schools

Ala., Citronelle—Mobile County Bd. of School Commrs., W. C. Griggs, Supt., Mobile, let contract at \$52,985 to R. L. Brown, Atmore, for school; Owen & Clarke, Archts., Merchants Natl. Bank Bldg., Mobile. 7-31

Ala., Tuskegee—Macon County Bd. of Education, W. B. Riley, Supt., let contract to Connor Bros. for 2-story and basement, 80x199 ft., brick school; asphalt shingle roof, stone trim; plans by State Bd. of Education, Montgomery.

Ark., Des Arc—Special School Dist. No. 5 let contract to Homer Stewart, Conway, for 2-story and basement, 12-classroom and auditorium school; Wittenberg & Deloney, Archts., Home Insurance Bldg., Little Rock.

Ark., Floral—Floral Special School Dist., care W. T. Jernigan, Independence County Supt. of Schools, Batesville, let contract to J. Koehler, Searcy, for \$10,000, 1-story, brick school.

Ark., Pleasant Plains—Pleasant Plains Special School Dist. Trustees let contract to J. Koehler, Searcy, for \$12,000, 1-story, brick school.

D. C., Washington—District Commrs., Room 509 Dist. Bldg., let contract at \$33,000 to Arthur L. Smith & Co., 2539 Pennsylvania Ave., N. W., for athletic field at Francis Jr. High School N St., N. W., between 24th and 25th Sts.

D. C., Washington—George Washington University, 2033 G St. N. W., erecting \$15,000, 1-story, 46x8 ft., brick, conc. block and steel laboratory, 2026 H St. N. W.; slag roof, conc. floors; Frank W. Burnett, Contr., 832 D St. S. E.; Norris I. Crandall, Archt., 2101 G St. N. W. 8-14

Fla., Tallahassee—State Bd. of Control, P. K. Yonge, Chmn., Carling Hotel, Jacksonville, let contract to J. M. Raymond Construction Co., Hildebrandt Bldg., Jacksonville, for 2-story, 91x42-ft., rein. conc., brick, stone trim boiler house at Florida State College for Women; Barrett roof; Rudolph Weaver, Archt., Peabody Hall, Gainesville; Robert & Co., Engrs., Bona Allen Bldg., Atlanta. 7-31

Ky., Dawson Springs—Bd. of Education let contract to Ervin & Dame for \$35,000, brick and conc. school; G. Tandy Smith, Archt., Guthrie Bldg., Paducah. 6-19

Ky., Graham—Muhlenburg County Bd. of Education, M. C. Hughes, Supt., Greenville, erect \$40,000, 2-story and basement, 90x54 ft., brick and hollow tile high school; H. E. Boyle & Co., Archts., Furniture Bldg., Evansville, Ind.; John McCullen, Contr., Greenville. 6-12

La., Baton Rouge—Standard Plumbing, Heating & Supply Co., Inc., 227 Laurel St., has contract for installing Home Economics Bldg., at Louisiana State University.

La., Edgard—St. John the Baptist Parish School Bd. let contract at \$29,650 to Pierre Cassagne, Reserve, for 1-story, brick, 2-classroom and auditorium addition and repairs to high school; built-up comp. roof; A. S. Montz, Archt., 740 Poydras St., New Orleans. 7-24

La., Lake Charles—School Bd., Floyd Hamilton, Pres., let contract to L. F. Marti, Sallier St., to remodel old gymnasium at Lake Charles School for cafeteria; plumbing and wiring, Craft-Rushworth, Broad St.; Frigidaire cooling units, J. C. McCollister, Inc., 938 Ryan St.; general equipment, Berdon & Campbell Furniture Co., 701 Ryan St.; R. S. McCook, Archt., First Natl. Bank Bldg. 7-17

Mo., Farnfeld—Fornfeld Consolidated School Dist. No. 3, G. S. Cannon, Pres., let to Mr. Meeks, Parma, for \$11,000, 1-story, 68x98 ft., brick veneer gymnasium; hardwood floors, Carey built-up roof; A. F. Vogelsang, Archt. 7-31

Mo., Kansas City—Bd. of Education let contract at \$98,984 to E. L. Winn, Rwy. Exch. Bldg., for addition to Blenheim school.

Mo., Newtonia—Consolidated Dist. No. 9 let contract at \$26,493 to H. F. Stange, 1402 Sergeant St., Joplin, for 2-story, brick school; excavation started; maple floors, comp. roof; Felt, Dunham & Kreihn, Archts., 300 W. 47th St., Kansas City.

Mo., Columbia—University of Missouri, Leslie Cowan, Sec., erect addition and remodel medical building; John E. Epple, Contr., 117 N. Florissant Road, St. Louis; Jamieson & Spearl, Archts., Arcade Bldg., St. Louis.

Mo., Springfield—Bd. of Education, A. R. Stewart, Sec., let contract on combined bid at \$169,190 to M. E. Gillioz, Monett, for 2- and 3-story, 155x86 ft., brick, stone and rein. conc. Lincoln School, Sherman and Central Sts., and 2-story, 84x164 ft., brick, stone and rein. conc. gymnasium at Sr. High School, Jefferson St. near Central St.; J. B. McCarty Co., 423 St. Louis St., has contract at \$13,857 for heating Lincoln School; and at \$11,943 for plumbing in both Lincoln School and gymnasium; J. D. Manley & Co., 514 College St., has contract at \$20,415 for heating gymnasium; Electric Equipment Co., 303 South Ave., has contract at \$3377 for wiring Lincoln school; Ford Brass Co., 320 South Ave., has contract at \$2127 for wiring gymnasium; Hawkins & Nicholas, Archts., McDaniel Bldg.; Wm. B. Ittner, Inc., Asso. Archt., Continental Life Bldg., St. Louis. 7-17

Mo., St. Joseph—School Bd., A. L. Loving, Sec., let contract at \$437,483 to Lehr Construction Co., 2115 Frederick St., for 3-story and basement, 258x249 ft., rein. conc., brick, stone, 100-classroom Central High School; plumbing, heating and ventilating, \$125,540, Industrial Heating & Plumbing Co., 103 S. Fourth St.; electrical work, Karrasch Donly Electric Co., 1604 Frederick St.; Eckel & Aldrich, Archts., Corby Bldg., all St. Joseph; Walter E. Gillham, Consol. Engr., Interstate Bldg., Kansas City; Wm. B. Ittner, Inc., Supvy. Archt., Bd. of Education Bldg., St. Louis. 7-31

Mo., St. Louis—Following sub-contracts awarded on 1-story, 70x150 ft., brick and rein. conc. power house on School St. for Bd. of Education, Geo. W. Sanger, Act. Bldg. Commr., for which Dunham Construction Co., Chemical Bldg., has general contract at \$104,000; Boiler, breeching and brickwork, \$38,837, Union Iron Works, Chemical Bldg.; conveyor equipment, \$10,767, Link-Belt Co., 3638 Olive St.; piping and auxiliaries, \$61,814, American Power Piping Co., Merchants Laclede Bldg.; gage board and instruments, \$5907, Eichler Heating Co., Ry. Exch. Bldg.; 4-valve engine, \$17,250, Elliott Co., Ry. Exch. Bldg.; Diesel engine, \$17,397, Fulton Iron Works Co., 1259 Delaware Ave.; generator and exciter and switchboards, \$9760 and \$13,865, Westinghouse Electric & Manufacturing Co., 411 N. 7th St.; electrical wiring, \$30,900, S. C. Sachs, Inc., 1422 Olive St. 7-24

Mo., Webster Groves—Epworth School, Maude Norling, Supt., erecting two 3-story and basement, 87x38 ft., brick and rein. conc. dormitories between Elm St. and Circle Drive; Gale E. Henderson, Archt., Arcade Bldg., superintends and sublets work; John Craig & Son, 3311 Semple St., has contract for carpenter work.

N. C., Mount Airy—Surry County Bd. of Education, E. S. Hendren, Supt., let contract at \$42,750 to Mitchell & Fowler, Pilot Mountain, for six-room and auditorium schools at Green Hill and Siloam; 5-room additions to White Plains and Franklin, 7-room and auditorium school at Bannertown; all brick; one story, built-up and asphalt shingle roofs, brick and conc. foundations, oak floors; D. H. Cooke, Engr., Mount Airy. 8-14

N. C., Raleigh—State School for Negro Blind and Deaf Institute, C. M. Wilson, Chmn., Bldg. Comm., let contract at \$158,000 to J. P. Rogers, Smithfield, for administration building, 4 dormitories, power house and heating plant; heating, \$26,194, Piedmont Plumbing Co., Commercial Bk. & Tr. Bldg., Gastonia; Geo. R. Berryman, Archt., 102 W. Hargett St., Raleigh. 7-31

Okla., Oklahoma City—Bd. of Education, J. G. Stearley, Clk., let contract at \$20,000 to Wm. Neubauer, 421 W. California St., for Riverside School addition; Layton, Hicks & Forsythe, Archts., Braniff Bldg.; also at \$36,358 to Rucks-Brandt Construction Co. for Culbertson School addition; Guy C. Reid, Archt., Okla. Savings & Loan Bldg. 5-29

S. C.—Eastover—School Bd., J. F. Craig, Supt., let contract to George Seastrunk, 1226 Main St., Columbia, for \$10,000, 1-story, 100x100 ft., brick veneer school; brick foundation, wood floors, comp. roof. 7-31

S. C.—Travelers Rest—Travelers Rest Consolidated High School Dist. Trustees let contract to Thomas Nilson, Wallace Bldg., Greenville, for \$15,000 school; F. H. & J. G. Cunningham, Archts., 201-A E. Coffee St., Greenville. 8-14

Tenn.—Memphis—State Bd. of Education, P. L. Harned, Nashville, let contract at \$120,500 to Hamilton & Begley Co. for 3-story and basement, 78x193 ft., brick and rein. conc. science building at West Tennessee State Teachers' College; George Mahan, Jr., Archt., Manhattan Bank Bldg. 7-31

Tex.—Austin—State Bd. of Control, Claude D. Teer, Chmn., let contract to Brydson Brothers for \$10,000, 3-story, 13x60 ft. brick and rein. conc. addition to Oral Training Bldg. at State School for Deaf; Giesecke & Harris, Archts., Norwood Bldg. 7-31

Tex.—Bleakwood—Bleakwood and Salem Consolidated School Dist. Trustees let contract to J. D. Adams, Kirbyville, for \$10,000 school near Trout Creek bridge on Newton-Orange highway. 7-31

Tex.—Fort Worth—Lydick Roofing Co., 100 Missouri St., has contract for roofing for stadium under construction at Texas Christian University for which Butcher & Sweeney, 806 1/2 Taylor Ave., have general contract at \$273,579; Wyatt C. Hedrick, Inc., Archt., First Natl. Bank Bldg. 5-1

Tex.—Mirando—Mirando City Ind. School Dist. Trustees let contract to E. H. Page, Ugarte Bldg., Laredo, for \$15,000, 1-story, 193x53 ft. brick or tile high school. 7-31

Tex.—San Angelo—San Angelo Ind. School Dist., C. R. Hallmark, Sec., School Bd., let contract to Will O'Connell, 307 S. Jefferson St., at \$86,700 for 2-story and balcony, 158x105 ft., brick, tile and rein. conc. gymnasium at San Angelo High School; Anton F. Korn, Jr., Thomas Bldg., Dallas, and C. C. Alexander, San Angelo Natl. Bank Bldg., San Angelo. Asso. Archts. 8-7

Va., Richmond—Right Rev. A. J. Brennan, Bishop of Catholic Diocese of Virginia, Chmn., Bldg. Comm., let contract to John T. Wilson Co., Inc., Mutual Bldg., for group of 13 buildings for St. Joseph's Academy and Orphan Asylum at Hollybrook, 250-acre tract on Richmond-Washington highway; \$750,000 to \$1,000,000; consist of 8 dormitories, central chapel, school building, gymnasium and priest's house; Romanesque architecture; brick and terra cotta, stone trim, tile roofs; Carneal, Johnston & Wright, Archts., Electric Bldg. 7-31

Va., Williamsburg—Following sub-contracts awarded on Womens Dormitory No. 3, under construction (first floor line) at College of William and Mary, for which J. J. McDevitt Co., Builders Bldg., Charlotte, N. C., has general contract: Rein. steel, Southern G-F Co., 305 E. Fifth St., Charlotte; cement and gravel, Williamsburg Coal Co.; plumbing and heating, Williamsburg Engineering Co., both Williamsburg; face brick, Booker Brick Co.; orna. stone, Economy Concrete Co., Central Natl. Bank Bldg., both Richmond; common brick, Sanford Brick Co., Sanford, N. C.; granite, Rowe & Roach, Railroad St., Greensboro, N. C.; plastering, S. Mirabella, Dickson Bldg.; orna. iron and struc. steel, Norfolk Iron & Wire Co., 136 W. Wilson Ave., both Norfolk; millwork, R. F. Slaughter Lumber Co., Phoebus; painting, G. L. Craig, 206 10th St., Lynchburg; Chas. M. Robinson, Archt., Times-Dispatch Bldg., Richmond. 7-3

Stores

Ark., Russellville—W. J. White started work on \$20,000, 2-story, brick store; owner builds by sub-contract.

Fla., Palm Beach—Palm Beach Co., Seaview Ave., let contract at \$42,275 to R. C. McNeill, Inc., 3829 Pasco Navarro, for building to be occupied by E. F. Hutton & Co., Breakers Hotel.

Ga., Atlanta—Robert Maddox, First Natl. Bank, let contract to The Flagler Co., Red Rock Bldg., for repairs to brick building, Alabama and Forsyth Sts., damaged by fire; comp. roof.

Ga., Atlanta—Asa G. Candler, Inc., Cand-

ler Bldg., remodel building, 119-21 Peachtree St.; \$10,000; brick and struc. steel, comp. roof; owner builder by day labor.

Ga., Milledgeville—Lee Jordan erect 2-story, brick store; comp. roof; owner builds. 8-14

La., Tallulah—M. M. Bloom let contract to W. H. Blane, Monroe, for \$75,000, 1-story, 138x300 ft., steel frame, brick and stucco Arcade Bldg.; 19 stores and filling station; International Steel Co., Evansville, Ind.

Mo., St. Charles—Osmund Haenssler let contract to Chas. Bortfeld, 128 N. Fifth St., for 2-story and asement, brick store, 122-24 S. Main St.; T. P. Barnett Co., Archt., Arcade Bldg., both St. Louis.

Okla., Oklahoma City—Clem G. Busken, 115 E. Park St., excavating for \$35,000, 2-story, 45x76 ft., brick, steel and rein. conc. store and apartment.

Tenn.—Memphis—Collier Estate, Thos. B. Collier, 858 Poplar Ave., soon start work on three 1-story, brick stores, 2368-74 Central Ave.; \$20,000, comp. roofs, conc. and wood floors; Polk Agee, Archt., Fidelity Bank Bldg.; J. A. Parker, Contr., care owner.

Tenn.—Memphis—C. D. Peoples, 150 Madison Ave., let contract to J. L. Stewart, 3439 Summer Ave., for two 1-story, brick stores, Jefferson Ave. and Waldron St.; comp. roof, conc. and wood floors.

Warehouses

Ala., Birmingham—Albert S. Wynn, 2304 N. First Ave., let contract to W. P. Mem-bourne, Roebuck Springs, Birmingham, for 2-story, brick and frame warehouse, 542 W. 7th St.; built-up roof; H. J. Heinze Co., Lessee, 2315 Morris Ave. 7-31

Ala., Montgomery—Howard L. Foshee, 216 St. Charles Ave., started work on \$10,000, 1-story, 50x150 ft., brick warehouse and office building, 745 N. McDonough St.; tar and gravel roof; Greeson Manufacturing Co., Contr., 103 Shady St., N. Montgomery. 8-14

N. C., Kinston—Quinn & Miller started work on \$20,000, 2-story, brick warehouse, Queen and Caswell Sts.

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Carpet Machine.—H. G. Wood, P. O. Box 553, Richmond, Va.—Wants prices and data on 35-2 Singer carpet machine, good condition.

Draglines.—Equitable Equipment Co., Inc., Elysian Fields Ave. and Florida Walk, New Orleans, La.—Wants prices and data on used draglines, good condition, 1/4 to 2-yd. capacities, gasoline or Diesel powered; requests full details, condition.

Garbage Disposal Plant.—Southern Metal Culvert Co., Stuart, Fla.—Wants prices and data from manufacturers of garbage disposal plants, for converting garbage into tannage.

Hoist (gas power).—Blythe & Duerson, Contrs., Box 253, Eagle Pass, Tex.—Hoist suitable for 1 and 2-story jobs, for brick and concrete; prices and data.

Hoisting Apparatus.—R. E. Meekins & Son, Contrs., Trinity, Tex.—Want prices and data.

Punch Presses, etc.—W. E. Mathews, P. O. Box 632, Ensley, Ala.—Wants prices and data on used small punch presses; also on tool room equipment incident to erecting plant to manufacture line of reinforcing steel specialties.

Water Works.—Town of Paw Paw, W. Va., Geo. S. Filler, Mayor, about to start investigating feasibility of installing water system for town, seemingly only source of water supply deep wells or Potomac River; will have electricity for power; and wants to correspond with concerns who might be interested in any lines connected with such a project, as engineers, well drillers, pumping pipe manufacturers, etc.

Guyan Machine Shops, Logan, W. Va.—Wants prices and data on following:

- (1) **Boring Mill**—horizontal, boring, drilling and milling or floor mill
- (2) **Crane**—about 5-ton capacity, locomotive type
- (3) **Drill (Air)**—Thor., 1 1/4-in. capacity or larger
- (4) **Drill (Radial)**—preferably single pulley drive
- (5) **Hoists**—for I beam, 1 to 5-ton capacity, a. c. and d. c., 220 volts
- (6) **Motors**—a. c., 220-440 volts, 3 phase, 60 cycle, 5 h. p. to 100 h. p.
- (7) **Motor (Hoist)**—50 h. p., 500 volts, d. c., preferably series wound, complete with control
- (8) **Welding Machine**—200 to 300 amperes, gasoline driven.

Ogletree Construction Co., 11th St., An-niston, Ala.—Wants prices and data on following:

- (1) **Hoist**
- (2) **Mortar Mixer**
- (3) **Mixers**—10 ft.
- (4) **Small Tools.**

Texas Fibres Co., 820 Bayland Ave., Hous-ton, Tex.—Wants prices and data on follow-ing:

- (1) **Electric Motors**
- (2) **Hay Baling Presses**—power
- (3) **Hemp Baling Presses**—power
- (4) **Hemp and Jute Carding Machines**
- (5) **Hemp and Jute Hackling Machines**
- (6) **Motors (Electric)**—5 to 15 h. p.
- (7) **Round Bale Presses**—power.

Miscellaneous

Bay Rum.—Dawson Mfg. Co., Enfield, N. C., manufacturer hair dressing—Wants prices and data on bay rum in barrel lots.

C. O. Smith Co., P. O. Box 206, Hazlehurst, Ga.—Wants to contract with firm in position to manufacture newly patented tool for pulling tins and nails from turpentine trees without injuring tins.

Fabric Tubing.—Civic Utilities Corp., 522 Fifth Ave., Suite 710, New York—Wants prices and data from fabric mills in position to weave fabric tubing 2-in. diameter.

Spring (Piston Ring).—Geo. T. Brown, 313 Millsaps Bldg., Jackson, Miss.—Wants prices and data from manufacturers on springs to be used in piston ring manufacture.

Building Material and Equipment

C. S. Kirkpatrick, Ch. Engr., Missouri Pacific Lines, Union Station, Houston, Tex., wants prices on following for \$20,000 warehouse, Harlingen, Tex.:

Roofing—built-up
Steel Sash and Trim.
Tile—hollow.

Dye & Mullings, Contrs., Columbia, Miss., want prices on following for \$15,000 school at Loranger, La.:

Roofing—asbestos shingle.

Favrot & Livaudals, Ltd., Archts., Hiber-nia Bank Bldg., New Orleans, La., wants prices on following for \$85,000, 4-story building for Singer Sewer Machine Co.:

Elevators
Flooring—linoleum, tile
Metal Doors
Roofing—built-up
Steel Sash and Trim
Tile—hollow.

Guyan Machine Shops, Logan, W. Va., wants prices and data on following:
Building—about 40x80x12 ft. to eaves.

Hanker & Cairns, Archts., Court Square Bldg., Memphis, Tenn., want prices on following for 1 story and basement, 50x170 ft., building for the Upjohn Co.:

Cast Stone—inserts and belt course
Dumb Waiters
Flooring
Steel Sash and Trim.

Henry C. Smith, Archt., Auditorium, Independence, Mo., wants prices on following for \$500,000 hospital:

Cast Stone
Dumb Waiters
Electric Refrigerators
Elevators
Flooring—composition.
Incinerator
Limestone
Metal Doors
Steel Sash and Trim
Tile—hollow.

Hugh E. White, Archt., 207 W. Fourth Ave., Gastonia, N. C., wants prices on following for hospital ward:

Cast Stone
Flooring—tile, composition tile
Roofing—built-up, slate
Steel Sash and Trim
Tile—interior
Terra Cotta Trim.

Lucius R. White, Jr., Archt., Court Square Bldg., Baltimore, Md., wants prices on following for 3-story and basement, 60x150 ft., administration building for School Bd.:

Flooring—linoleum, terrazzo
Incinerator
Limestone
Marble
Metal Doors
Roofing (flat)—built-up
Tile—hollow
Vaults
Ventilators
Wire Glass
Brass and Bronze Work.

Oglethorpe Construction Co., 11th St., Aniston, Ala., wants prices on following for \$125,000 Air Corps tactical school, Maxwell Field, Montgomery, Ala.:

Electric Refrigerators
Flooring—linoleum
Limestone
Marble
Metal Doors
Roofing—tile
Steel Sash and Trim
Tile—hollow
Vaults
Ventilators.

Rev. C. Hewitt, Raleigh, Tenn., will probably want following materials for remodeling church:

Art Windows
Brick for Veneer—15,000
Cement—carload
Furniture
Heating Plant (hot air)
Masonite or Other Insulating Material—6000 sq. ft.
Millwork
Steel Sash—for basement.

Theo. L. Perrier, Archt., Maritime Bldg., New Orleans, La., wants prices on following for 1-story, 60x75 ft. store for Maple Realty Co.:

Ventilators
Wire Glass
Electric Refrigerators
Flooring—composition
Incinerator
Roofing—built-up
Steel Sash and Trim
Tile—hollow

W. T. Nolan, Archt., Canal Bank Bldg., New Orleans, La., wants prices on following for store for Alexander Watkins:

Flooring—tile, composition
Metal Doors
Roofing (flat)—built-up, tile
Tile—gypsum, hollow
Wire Glass.

Bids Asked

Aerial Photographs.—U. S. Engr. Office, Second New Orleans Dist., Foot of Prytanis St., New Orleans, La.—Bids Sept. 2 for aerial photographs of southern section of Atchafalaya River Basin, approx. 1780 sq. mi.

Alleys.—Washington, D. C.—See Roads, Streets, Paving.

Automobiles.—Comms., Dist. of Columbia, Washington, D. C.—Bids Aug. 25 for 2 automobile patrols.

Belting, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Aug. 27 for 400 ft. leather belting, 600 ft. rubber belting and 34 lb. packing, delivery Quantico, Va.

Boats, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Aug. 26 for knockabout boats and kerosene to Naval Academy, Annapolis, Md.

Boat (Hull).—U. S. Engr. Office, Montgomery, Ala.—Bids Sept. 15 for constructing 80-ft. creosoted wood hull.

Bolts, Nuts and Washers.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 25 for bolts, nuts and washers.

Bridge.—Nashville, Tenn.—See Construction News—Roads, Streets, Paving.

Bridge.—Paducah, Ky.—See Construction News—Bridges, Culverts, Viaducts.

Bridge.—Natchitoches, La.—See Construction News Columns—Bridges, Culverts, Viaducts.

Bridges.—State of Alabama—Bids for 9 bridges. See Construction News—Roads, Streets, Paving.

Bridge.—Anguilla, Miss.—See Construction News—Bridges, Culverts, Viaducts.

Bridges.—State of Kentucky—Bids for 4 bridges. See Construction News—Bridges, Culverts, Viaducts.

Cable.—U. S. Coast Guard Hdqrs., Washington, D. C.—Bids Sept. 1 for submarine cable, 4-conductor type 17, in lots of 25,000 to 85,000 ft., and type 17, in lots of 5000 to 85,000 ft.

Cement.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 25 for cement for Dam No. 26, Ohio River, and Lock No. 1, Little Kanawaha River.

Chairs.—Comms., Dist. of Columbia, Washington, D. C.—Bids Aug. 27 for 750 assembly hall chairs for public schools.

Dikes.—U. S. Engr. Office, Postal Telegraph Bldg., Kansas City, Mo.—Bids Aug. 27 for constructing about 21,460 lin. ft. pile clump dikes and 5800 lin. ft. standard revetment, Missouri River, Wilhoite Bend.

Diesel Engines.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Sept. 5 for Diesel engines, Sch. 2580.

Drainage Ditch.—Calhoun County Bd. of Drainage Comms., Pittsboro, Miss.—Bids Sept. 1 for opening, cleaning and repairing ditch. See Construction News—Drainage, Dredging and Irrigation.

Excavation.—City, A. J. Hawkins, Engr., Birmingham, Ala.—Bids Sept. 10 for rock and earth excavation, Sections 1 and 2, Valley Creek drainage project. See Construction News—Drainage, Dredging and Irrigation.

Feed Water Heater.—U. S. Veterans' Bureau, Arlington Bldg., Washington, D. C.—Bids Sept. 16 for feed water heater, U. S. Veterans' hospital, Outwood, Ky.

Fill.—Alabama—See Construction News—Roads, Streets, Paving.

Fill.—See Construction News—Bridges, Culverts, Viaducts.

Fire Hose.—Dallas County, Charles E. Gross, County Auditor, Dallas, Tex.—Bids Sept. 15 for 2000 ft. 2½-in. standard fire hose.

Kitchen Equipment.—Commanding Officer, St. Louis Medical Depot, St. Louis, Mo.—Bids Aug. 25 for 2 vegetable steamers, 2 tables for bakery use, dough baking machine, 5 electric dishwashers, cabinet bake oven, electric refrigerator, electric driven meat, fish and bone cutter and proving box.

Lubricators, Valves, etc.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 26 for lubricators, valves, etc.

Miscellaneous.—Bureau of Supplies and Accounts, Navy Dept., F. G. Pyne, Act. Paymaster Gen., Washington, D. C.—Bids Aug. 26 for coke, motor truck, telephone cable, wire, kerosene and shaper.

Paints, etc.—Quartermaster, Fort Bliss, Tex.—Bids Aug. 28 for 1220 gal. paint, 300 gal. linseed oil, 300 gal. turpentine, 100 gal. paint drier, 300 lb. white lead and 20 boxes window glass.

Paint Materials.—U. S. Engr. Office, Huntington, W. Va.—Bids Aug. 29 for paint materials.

Power Plant Improvements.—Town of Wilson, N. C., Charles R. McLean, Mayor—Bids Aug. 25 for labor, materials and constructing extensions and additions to power plant building for municipal power plant; building will be of brick masonry with terra cotta and including struc. steel supports, steel roof trusses, roofing, rein. conc. floors, steel sash and steel rolling doors, painting, lighting, etc., also including certain piping installations; Wm. C. Olsen, Inc., Consult. Engrs., 15 Exchange Place, Raleigh.

Pulverized Fuel Equipment.—U. S. Veterans' Bureau, Arlington Bldg., Washington, D. C.—Bids Sept. 2 for pulverized fuel equipment at U. S. veterans' hospital, Augusta, Ga.

Rail Supplies.—Office Chief of Engrs., U. S. Army, Washington, D. C.—Bids Sept. 5 for 291 70-lb. rail, 4000 tie plates, 100 kegs track spikes.

Railroad Ties.—Office, Ch. of Engrs., U. S. Army, Washington, D. C.—Bids Sept. 5 for 2500 railroad cross ties, creosoted; 90 creosoted bridge ties; 20 creosoted piles; 200 creosoted timbers; 24 stringers; 12 caps and 10 creosoted timbers.

Ranges and Water Heaters (Electric).—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids Sept. 4 for electric ranges and electric water heaters, Sch. 2581.

Road.—Staunton, Va.—See Construction News—Roads, Streets, Paving.

Road.—Annapolis, Md.—See Construction News—Roads, Streets, Paving.

Road.—Nashville, Tenn.—See Construction News—Roads, Streets, Paving.

Roads.—State of Maryland. Bids for 5 roads. See Construction News—Roads, Streets, Paving.

Road.—Tallulah, La.—See Construction News—Roads, Streets, Paving.

Road.—Dallas, Tex.—See Construction News—Roads, Streets, Paving.

Roads.—State of Alabama—Bids for 10 roads. See Construction News—Roads, Streets, Paving.

Road Materials.—Louisiana Highway Comsn., Louisiana Natl. Bank Bldg., Baton Rouge, La.—Bids Aug. 26 for following: Washed and screened gravel, 40% sand-clay gravel, reef shell, clam shell, crushed limestone, sag and sand for month of September.

Street.—Nashville, Tenn.—See Construction News—Roads, Streets, Paving.

Street.—Whitesville, Ky.—See Roads, Streets, Paving.

Street, etc.—St. Louis, Mo.—See Construction News—Roads, Streets, Paving.

Telephone Equipment.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Aug. 26 for telephone equipment, delivery Parris Island, Port Royal, S. C.

Water Piping.—Suprv. Archt., Treasury Dept., Washington, D. C.—Bids Sept. 2 for furnishing and installing new brass water piping in U. S. court house and post office, Charleston, S. C.

Woven Wire.—Ben M. Sawyer, Ch. Highway Commr., Columbia, S. C.—Bids Aug. 25 for industrial woven wire (chain link) fencing and gates.

Trade Literature

Shape-Cutting Machines.—The August issue of Oxy-Acetylene Tips, published by the Linde Air Products Company, New York, carries an article, "Shape-Cutting in the Machine Shop," which deals with possible incidental applications of automatic oxy-acetylene shape-cutting machines installed in manufacturing plants for regular production. Some of these applications cover the making of tools and accessory equipment.

Power Machinery.—The Rockford Power Machinery Company, Rockford, Ill., is distributing bulletin No. 38, illustrating and describing some of its outstanding power units, including motors, generators, turbines and compressors. All Rockford rebuilt apparatus is completely disassembled, thoroughly rebuilt and tested by electrical engineers.

Iron and Steel Report.—The annual statistical report of the American Iron and Steel Institute, New York, for 1929, now available, presents comprehensive statistics on the following: Summary of Iron and Steel Production; Summary of Miscellaneous Statistics; Pig Iron and Ferro-Alloys; Steel Ingots and Castings; Rolled Iron and Steel; Districts in Pennsylvania and Ohio; Production of Tinplates, Galvanized Sheets, Pipes and Tubes; Nails, Rail Joints and Charcoal Blooms; Production and Shipments of Iron Ore, Coal and Coke; Miscellaneous Production Statistics; Imports and Exports; Average Monthly and Yearly Prices; Statistics for Canada, and Foreign Statistics for Iron Ore, Pig Iron and Ferro-Alloys, and Steel Ingots and Castings.

Road and Street Paver.—The National Equipment Corporation, Milwaukee, Wis., has issued catalog NK 24, devoted to the Koehring heavy duty 27-E paver. Outstanding features of this heavy duty constructed paver are its autocycle operation, liberal use of roller and ball bearings and the grouping of major gear assemblies in enclosed cases, running in oil baths.

Rolling Steel Doors.—A catalog has been issued by the R. C. Mahon Company, Detroit, Mich., illustrating and describing the construction and application of Mahon rolling steel doors and accessories. The publication presents complete installation data, and a study of the compact, positive operating mechanisms and other new features of the doors.

Centrifugal Pumps.—The Chicago Pump Company, Chicago, Ill., has issued two pieces of literature on centrifugal pumps, one designated as bulletin No. 14, which illustrates and describes the more popular pumps of the Chicago line and indicates their application. The other is a 4-page folder devoted to Condo-Vac vacuum pumps and points out important features of design.

Better Welds.—A publication issued by the American Rolling Mill Company, Middletown, Ohio, is entitled "Better Welds With ARMCO Ingot Iron." Aside from pointing out rust-resistance and workability of Armco ingot iron, the publication carries a number of illustrations showing methods of welding and the application of this product to industrial purposes.

Sound-Proofing Tests.—Architects may be interested in Laboratory Bulletin No. 5, issued by Samuel Cabot, Inc., 141 Milk street, Boston, Mass., manufacturing chemists and producers of shingle stains, heat insulating and sound-deadening "quilt." The bulletin embodies a report of tests on sound-proofing partitions and floors.

Naval Stores Year Book.—Gamble's International Naval Stores Year Book for 1930-31, published by Thomas Gamble, Savannah, Ga., deals with naval stores in their international aspect and presents production and marketing data. The price is \$3.00.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Opens Omaha Office.

According to announcement by the Chicago Pump Company, Chicago, Ill., manufacturers of sewage, condensation, circulating, bilge, fire, house and vacuum pumps, H. G. Ragan has been added to the company's staff and will have offices in the Brandeis Theatre Building, Omaha, Neb.

Building Big Generators for Russia.

In addition to four of the world's largest hydroelectric generators under construction in America for the Union of Socialist Soviet Republics, five more will be built for that country. The first four are being built by the Schenectady works of the General Electric Company and the fifth will be entirely

Ash Conveyors.—The Treadwell Engineering Company, Hahn Division, Easton, Pa., has issued catalog No. 100 devoted to Hahn steam-jet conveyors for handling ashes, soot, furnace slag, coke and other abrasive materials.

Ramming Mixture.—The Chas. Taylor Sons Company, Cincinnati, Ohio, manufacturers of fire brick, has issued a booklet on the P. B. Sillimanite ramming mixture for monolithic lining in oil and gas fired furnaces and electric furnaces for melting brass, aluminum and special steel alloys.

Tie Plates, Rails, Etc.—Zelnicker in St. Louis is distributing bulletin No. 409 devoted to tie plates, rails, angle bars, splice bars, compromise joints, frogs, switches, crossings, portable tracks and track spikes. The company also carries in stock cranes, shovels, oil engines, steel sheet piling, turntables, locomotives, cars and other equipment.

Traction Apparatus.—Special publication 1880, issued by the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., illustrates and describes the application, operation and construction of oil electric traction equipment. The booklet is divided into five sections; oil electric locomotives and rail cars, selection of equipment, description of the oil electric power plant, oil electric rail car data and oil electric locomotive data.

Stock Market.—The B. C. Forbes Publishing Company, New York, has issued a volume of 875 pages, "Stock Market Theory and Practice," by R. W. Schabacker, financial editor of Forbes Magazine. In the preface the author states it has been his "constant aim to present a book which will offer full and complete information on every matter connected with the stock market and with stock market operation." The volume is in two parts, the first dealing with mechanics or tools and the second with practical trading theories. It contains a total of 27 chapters, treating such subjects as: The Stock Exchange; Brokerage Houses and Trading Facilities; Development of the Stock Clearing Corporation; The Short Sale; Stock Exchange Credit and Marginal Trading; Brokers' Loans; Dealing with the Broker; Dividends and Rights; Principles of Trading, and other subjects. The price is \$7.50.

constructed there, while the remaining four will be built jointly at Schenectady and in the U. S. S. R. The generators are rated at 77,500 kilovolt-amperes each. Nine water turbines to operate under a head of 123 feet are being supplied by the Newport News Shipbuilding and Dry Dock Company, Newport News, Va.

Curtin-Howe Office Changes.

The Curtin-Howe Corporation, New York, timber preservation engineers, announces removal of its Chicago office from 410 North Michigan avenue to 20 North Wacker drive, with F. S. Shinn, Western manager, in charge. A new office has been established in the Security Building, Minneapolis, Minn., with D. R. Manuel in charge.

Foundry Officials Visit Canada.

Louis B. Ladoux and Joseph J. Crotty, president and vice president, respectively, of the Central Foundry Company, New York, and William P. Gregory, president of the New Jersey Galvanizing Company, are on an extended trip through Canada and will stop at Winnipeg for the annual meeting of the American Society of Sanitary Engineers.

Changes in Reading Iron Company.

Leon E. Thomas has resigned as president of the Reading Iron Company, Reading, Pa., and A. J. Maloney, president of the Philadelphia and Reading Coal and Iron Company, Philadelphia, of which the Reading Iron Company is a wholly owned subsidiary, has been elected chairman of the board of the Reading Iron Company and will assume executive duties of that company until a successor to Mr. Thomas is appointed.

Marsh Company Representatives.

Jas. P. Marsh & Company, Chicago, a division of the Commercial Instrument Corporation, manufacturing heating systems and units, industrial instruments, automatic air valves and gauges, announces appointment of M. A. Cooper as district sales representative at New Orleans. E. L. Aikins, of the Marsh Sales Company, has been appointed district representative for Washington, Oregon, Montana, Idaho and British Columbia.

Castings Plant at Auction.

The Industrial Plants Corporation, New York, has been appointed auctioneer to sell at public auction August 26, all land, buildings, machinery and equipment of the Syracuse Perfection Castings, Inc., Syracuse, N. Y. Everything will be sold piece by piece, the machinery and equipment to be offered as a whole. Land and buildings will be offered first as a whole and then in four separate parcels. Catalogs are available.

Identification Mark for Steel Corporation.

As emblematic of high ideals of service and as a sign of quality, the United States Steel Corporation and its subsidiary manufacturing companies, of which the Tennessee Coal, Iron & Railroad Company, Birmingham, is one of the most prominent, have adopted a new identification mark, which appears in an advertisement of the Tennessee Company in this issue of the MANUFACTURERS RECORD. The new mark will be used in future advertising and promotional work in connection with other symbols of the Steel Corporation.

Auction Sale of Machinery and Tools.

Samuel T. Freeman & Co., auctioneers, 108-10 Chestnut street, Philadelphia, will offer at an assignees' auction sale September 4 at Oakdale, Pa., 15 miles west of Pittsburgh, machine tools, equipment and contractor's machinery of the assigned estate of the Contractor's Machinery & Supply Co., the sale to be made in separate lots. Major items include 10 standard and narrow gauge 50 to 60-ton locomotives, locomotive and wrecking cranes, hoisting and trench machines, pumps, steam engines, steam shovels, engines, lathes, milling machines, etc.

Bids will be opened September 16 in the office of Jas. A. Wetmore, Acting Supervising Architect of the Treasury Department, Washington, for construction of a \$1,000,000 Federal building in Tulsa, Okla.

Conditions Favor Live Stock and Dairying In South

Atlanta, Ga., August 18.—“Drouth conditions in many of the principal dairying and live stock growing sections of the country favor a rapid growth of these industries in the South,” according to Roland Turner, general agricultural agent of the Southern Railway System. “In this section, especially in the lower South, the production of forage and grain has not been reduced as in other sections.” Further, Mr. Turner says:

“Rising prices seem in prospect a year hence and Southern beef cattle, hog and sheep growers will probably find a favorable market for stock they will be able to offer as a result of steps taken now to increase production. Dairy products will probably also be in greater demand at higher prices.

“Herds upon Southern farms should be maintained and, where possible, increased. Every young animal, especially females, should be grown out and added to the producing herd. For years, farm experts have insisted that the South's position would be materially improved by greater attention to dairying and the production of beef cattle, sheep, hogs and poultry. While encouraging progress has been made, present conditions offer opportunity for the most favorable advance along these lines.”

Standardization of Farm Products

The standardization of farm products, whereby foods, feeds and fibers are graded according to quality, has been an outstanding development of modern American agriculture. A list of standards issued by the U. S. Department of Agriculture in the last fifteen years includes more than fifty farm commodities. These standards have been adopted wholly or in part by the various State Departments of Agriculture.

Although the use of the Federal standards by producers and shippers is optional in most cases, an increasing proportion of farm products is being sold on the basis of grade. The standards meet the modern merchandising requirement of sorting commodities according to quality so as to put them to the best use for which they are suited. They also facilitate business by providing a common trade nomenclature to designate quality.

Despite the increasing use of standards, the Department of Agriculture says, in a publication on the subject, that there is still considerable discussion as to whether it pays to grade agricultural products. The department points out that standardization is a means rather than an end in itself. Whether or not the producer or mar-

keter is compensated for the additional effort and expense involved in making such classifications depends upon his subsequent marketing practices and upon the trade demand for standardized products.

“For example,” the department says, “a country merchant seldom establishes price differentials for different grades when buying eggs from producers in very small lots. In contrast, large assemblers of eggs find it highly desirable to grade their shipments so that throughout the regular trade channels they may be bought and sold according to accepted commercial grades. As a general statement it may be said that the smaller the volume of business the less likely it is that grading to generally recognized standards will pay. In large-scale operations, however, standardization is now universally recognized as a basic requirement for success.

“Broadly considered, the purpose in establishing standards is to facilitate all of the marketing processes. Farm products may pass through many hands in moving from the centers of production to the wholesale markets. Many products are sold under contract for future delivery, and a large part of the business is transacted at long range. It is essential that there be a common language to insure mutual understanding between buyer and seller. But it usually is neither necessary nor desirable in such commercial transactions to require, in minute detail, specifications as to each factor influencing market quality. A general grouping of the

product into grades of the same range of value or utility is usually sufficient.”

The department's publication on this subject, designated Circular 8-C, is entitled “National Standards for Farm Products.” It gives an outline of the development and growth of standardization, tells how the standards are formulated and established, and discusses the factors that determine the standards for each of the various farm commodities.

Contract on \$8,000,000 Pipeline

Tulsa, Okla.—The Great Lakes Pipe Line Co., a jointly owned subsidiary of the Barnsdall Corp., Tulsa, and the Continental Oil Co., Ponca City, Okla., has awarded contract to the Sheehan Construction Co., Tulsa, for building two units of an \$8,000,000 gasoline pipeline to connect refineries in the mid-continent oil area of Oklahoma with market territory in the Central and Northwestern states, including Chicago, St. Paul, Minneapolis and Omaha. The two units will involve 55 miles of 6-inch pipe from the Continental Oil Company's refinery at Ponca City to Barnsdall, and 210 miles of 8-inch dimension pipe from Barnsdall to Kansas City. Bids will be opened Sept. 1 for building a 215-mile line from Kansas City to Des Moines; a 265-mile line from Des Moines to Minneapolis and St. Paul, and a 315-mile line from Des Moines to Chicago. The Omaha section, lines to Okmulgee and several other branches will be awarded later in September.

“Made-in-Carolina” Movement Outlined

By PAUL KELLY, Chief, Division Commerce and Industry,
N. C. Department of Conservation and Development, Raleigh.

EFFORTS will be concentrated on popularization of North Carolina's manufactured products in a “Made-in-Carolina” program to be launched September 1 by the State Department of Conservation and Development in conjunction with Governor O. Max Gardner's “Live-at-Home” movement to improve rural conditions. Governor Gardner expressed the opinion that creation of a spirit of optimism toward future conditions is necessary before business and industry take a definite swing toward prosperity. In fact, he believes the psychological viewpoint of industry, commerce, and other lines of endeavor must undergo a change as a requisite to a return to normal.

It is believed the fundamental benefit of this “Made-in-Carolina” program will be a stimulation of business and industry which in turn will be reflected to

every citizen in the State. One of the objectives is the familiarization of the buying public with the products of each community and the State as a whole. Displays of Carolina-made goods will be made in various cities and towns. During the week of September 1, every merchant is requested to display goods made in the State and add other Carolina-made goods to his stock.

It is hoped that one result will be the adoption by manufacturers of a plan for labelling as such every article produced for the consumer in North Carolina. It is believed this identification will add to North Carolina's prestige as a manufacturing State and be a source of effective advertising. With its products finding their way to the remote markets of the world, the adoption of a “Made-in-Carolina” label will be a valuable service.



Settle the main question once and for all with CAST IRON PIPE

THE above photograph was taken recently in Elyria, Ohio, where they are installing an important outfall sewer line using large diameter cast iron pipe.

The engineers, after thorough consideration chose cast iron pipe because of its durability and low maintenance cost. They wisely decided that over a period of years it would be most economical to put down pipe which lasts for a century. So they specified 1800 feet of 42-inch U. S. Cast Iron Pipe.

U. S. Cast Iron Pipe is made in strict accordance with established standard specifications. Every length is scientifically tested for strength and uniformity and bears the "Q-check" symbol of the Cast Iron Pipe Research Association.

Let us send you complete information regarding the advantages of specifying U.S. Pipe for water, gas and sewer mains, including our facilities for quick deliveries. Also inquire about deLavaud pipe which is centrifugally cast for greater strength and greater carrying capacity.

United States Pipe and Foundry Co., Burlington, N.J.

Sales Offices:
New York

Philadelphia
Pittsburgh

Cleveland
Buffalo
Chicago

Our pipe bears the "Q-Check"
trademark of The Cast Iron
Pipe Research Association

Dallas
Birmingham
Kansas City

Minneapolis
Seattle

San Francisco
Los Angeles

FINANCIAL NEWS

Bond Issues Proposed

Ark., Camden—City receives bids Aug. 30 for \$26,500 bonds to complete E. Washington St. dump.

Ark., Morrow—Morrow School Dist., Washington County, O. W. Bass, County Supt., voted \$10,000 bonds.

Ga., Brunswick—City Commrs. authorized \$40,000 paving bond issue; E. C. Garvin, City Mgr.

Ga., Barnesville—Courthouse, Jail—Lamar County considering selling \$65,000 bonds. 7-31

Ga., Cuthbert—Paving—City voted \$20,000 bonds. 7-31

Ga., Moniac—Moniac Consolidated School Dist., Charlton County, voted \$11,000 bonds.

Ky., Greenup—Greenup County Fiscal Court, W. S. Wheatley, Judge, opens bids Sept. 2 for \$100,000 refunding bonds.

Ky., Morgantown—Jail—Butler County votes in November on \$101,000 bonds.

La., De Ridder—Beauregard Parish School Bd. called election for Sept. 16 on bonds.

La., Harrisonburg—Catahoula Parish School Bd., E. W. Dayton, Pres., receives bids Sept. 2 for \$75,000, \$1000 denom., not to exceed 6%, Consolidated School Dist. No. 2 bonds.

La., New Orleans—City receives bids Sept. 10 for \$2,000,000 Sewerage and Water Board drainage bonds.

Miss., Greenville—Airport—City votes Sept. 11 on \$30,000 bonds. 8-7

Miss., Hattiesburg—Eatonville Consolidated School Dist., Forest County, votes Sept. 3 on \$10,000 bonds.

Miss., Jackson—State of Mississippi, H. C. Yawn, State Treas., reported, receives bids Sept. 1 for \$1,000,000 short term notes.

Miss., Vicksburg—Warren County Bd. of Supvrs., J. G. Sherard, Clk., receives bids Sept. 2 for \$12,000, not to exceed 6% loan warrants.

Miss., West Point—Street—City, T. B. Miller, Clk., receives bids Aug. 26 for \$49,116 bonds.

N. C., Asheville—Buncombe County voted \$50,000 Sand Hill School Dist. bonds.

N. C., Asheboro—City, Bd. of Commrs., opens bids Aug. 28 for \$25,000, not to exceed 6% hospital bonds.

N. C., Leakesville—Bd. of Trustees, C. C. Campbell, Secy., plans selling \$250,000 bonds by Jan. 1, 1931. 7-24

N. C., Louisville—Franklin County Bd. of Commrs., C. L. McGhee, Chmn., receives bids Aug. 28 for \$12,000 bond anticipation notes.

N. C., Southport—Brunswick County Commrs., John Jenrette, Chmn., receives bids Aug. 25 for \$45,000 6% \$5000 denom. revenue anticipation notes.

Okla., Holdenville—Water Works—City votes Aug. 26 on \$255,000 bonds.

Okla., Stilwell—Adair County, Sam J. Starr, Clk., voted \$60,000 court house bonds.

S. C., Greenville—City, School Dist., E. M. Blythe, Chmn., receives bids Aug. 26 for \$204,000, not to exceed 5% \$1000 denom. bonds.

S. C., Greenville—City, Greater Greenville Sewer Dist., plans election on \$525,000 bonds.

Tenn., Nashville—City, S. H. McKay, Clk., receives bids Aug. 29 for \$650,000, not to exceed 6% \$1000 denom. bonds, \$500,000 hospital and \$150,000 school. 7-3

Tex., Corsicana—Navarro County, Clay Nash, Judge, voted \$6000, 5% Chatfield School Dist. bonds.

Tex., Highlands—City votes Sept. 13 on \$30,000 street and highway bonds.

Tex., Marlin—Falls County votes Aug. 26 on \$45,000, 5½% Wilson Road Dist. Bonds.

Tex., Nacogdoches—City, R. C. Monk, Secy., voted \$35,000 refunding outstanding warrants. 7-31

Tex., Paris—Bourbon County Fiscal Court considering issuing \$100,000 highway bonds.

Tex., Sherman—City Comsn. called election for Oct. 7 on \$100,000 paving and bridge bonds.

Tex., Victoria—City votes Sept. 2 on \$250,000 5½% street improvement bonds.

Va., Bluefield—City, J. W. Baldwin, Mayor, voted \$40,000 \$5000 denom., not to exceed 6% water improvement bonds. 8-7

W. Va., Wheeling—Airport—Ohio County Commrs., Orion S. Koller, Pres., called election for November on \$800,000 bonds.

Bond Issues Sold

Ala., Anniston—Improvement—City, W. T. Morton, Jr., Treas., sold \$15,000 5½% \$500 denom. bonds to Merchants Securities Corp., Mobile, at \$15,010.50. 8-7

Fla., Tampa—First National Bank and Exchange National Bank purchased \$150,000 city of Tampa 5% refunding bonds at par.

Ky., Brodhead—Graded Common School Dist. sold \$13,500 5½% \$500 denom. bonds to Hanchett Bond Co., Inc., Chicago.

Maryland—State of Maryland, John M. Dennis, Treas., Annapolis, sold \$2,443,000, 4½% general construction bonds jointly to Union Trust Co. of Maryland, and Maryland Trust Co., both Baltimore, at 104.6699. 7-24

Md., Funkstown—Nicomemus National Bank of Hagerstown purchased \$15,000 4½% city water bonds at par.

Miss., Greenville—Courthouse, Jail—Washington County Bd. of Supvrs. sold \$90,000, 5% bonds to Commercial Bank of Greenville and Hibernia Securities Co., New Orleans, at \$175 premium.

Miss., Osyka—Refunding—Town sold \$15,000 bonds to Farmers' Bank, Osyka.

Okla., Cyril—School—Union Graded School Dist., Caddo County, sold \$14,000 bonds to Taylor-White Co., Oklahoma City.

Okla., Lawton—Water—City, Todd Sanders, Clk., sold \$600,000 bonds to American-First Trust Co., Oklahoma City; Exchange National Co., Tulsa; R. J. Edwards, Inc., Oklahoma City, and Merchants Commerce Co., St. Louis, Mo.

Tenn., Bristol—City sold \$36,000 bonds; \$24,000 6% street improvement and \$12,000 5% general improvement, to Bank of Bristol for premium of \$686.60. 7-7

Tenn., Trenton—City, School Bd., sold \$15,000 gymnasium bonds to Bank of Trenton & Trust Co. 8-14

Tex., Dallas—City Comsn., J. Waddy Tate, Mayor, sold \$3,900,000 4½% M. & N. bonds to syndicate composed of Continental Illinois Co., Harris Trust & Savings Bank, First Union Trust & Savings Bank, First Detroit Co. and Foreman State Corp., all Chicago, First National Securities Co., Dallas, Tex., Boatmens National Co., St. Louis, Mo., First Securities Corp., St. Paul, Minn., and Garrett & Co., Dallas; includes \$825,000 street opening and widening, \$300,000 street paving, \$450,000 school improvement, \$150,000 park improvement, \$1,650,000 storm sewer improvement, \$25,000 school. 7-31

Tex., Port Arthur—City, L. B. Abbey, Secy., sold \$125,000, 4½%, \$1000 denom. Port Arthur Independent School Dist. bonds to Seasongood & Mayer, Cincinnati, at 4.95.

Va., Norfolk—Norfolk County Bd. of Drainage Commrs., 622 Law Bldg., sold \$180,000 Butts Road Drainage Dist. 3 bonds to F. J. McGuire, West Palm Beach, Fla., at \$162,000. 7-10

West Virginia—State, Wm. G. Conley, Governor, Charleston, sold \$5,000,000, not to exceed 4½% highway bonds to a syndicate composed of Chase Securities Corp., Hallgarten & Co., R. L. Day & Co., Otis & Co., Ames, Emerich & Co., Kean, Taylor & Co., Emmanuel & Co., B. J. Van Ingen & Co. and H. L. Allen Co., all New York, Mercantile Commerce Co., St. Louis, Mo., Mitchell, Herick & Co., Cleveland, and Charleston National Bank, Charleston, for premium of \$200. 8-7

Building & Loan Associations

Fla., Gainesville—Industrial Loan Co. of Florida, capital \$100,000, chartered; J. H. Hodges, J. O. Todd, F. D. Bryant.

New Financial Corporations

La., Houma—Terrebonne Securities Corp., 307 E. Main St., capital \$37,500, chartered; Chas. A. Ledet, Pres.

Mo., St. Louis—Lloyds Securities Corp., capital \$410,000, chartered; Edward G. Rolwing, 211 N. Seventh St.

N. C., Forest City—City National Bank of Forest City being formed by G. B. Harrill and associates.

N. C., Shelby—Shelby Industrial Bank being formed by Geo. Blant, Forrest Eskridge, C. S. Mull and associates.

Tex., Amarillo—Bankers Bond and Mortgage Co., capital \$500,000, chartered; Neal Ainsworth, Pres., 101 Lincoln St., R. A. Underwood, V-pres. and Gen. Mgr.

Exchange National Bank, Tampa, Fla.,

J. A. Griffin, Pres., increasing capital \$250,000.

Owensboro Building & Loan Association, Hicks Fallin, Secy., Owensboro, Ky., plans increasing capital, \$1,500,000 to \$2,000,000.

Central Union Bank of South Carolina, W. J. Roddy, Jr., Pres., Columbia and Rock Hill, S. C., acquired First Trust & Savings Bank, Due West; R. B. McDill, Resident Mgr.

Eastern Bank & Trust Co., W. J. Swan, Pres., New Bern, N. C., plans reopening.

Financial Notes

American Locomotive Statement.

For the six months ended June 30, 1930, profits of the American Locomotive Company, New York, and its subsidiaries amounted to \$2,194,534. After providing for the two regular quarterly dividends on the preferred stock, there remained \$847,034, or the equivalent of \$1.10 per share on 770,000 shares of common stock outstanding. These figures compare with a total earned profit of \$3,075,939 for the first six months of 1929, which was equivalent after all charges and preferred dividends, to \$2.24 per share on the common stock outstanding. On July 1, 1930, the company had on its books a total of \$15,472,948 of unfilled orders as compared with \$17,834,363 on hand January 1, 1930, and \$31,727,460 on July 1, 1929. In a letter to the stockholders accompanying the semi-annual statement of the company, William H. Woodin, chairman of the board, states: "Signs are not lacking that an improvement in general business conditions may occur toward the end of the year. In any event, it is not unreasonable to believe that industrial progress and prosperity cannot be long deferred in a country so vast in natural resources, energy and accumulated wealth as the United States."

\$2,767,752 Increase in Earnings.

Net earnings of the Standard Gas and Electric Company, New York, and its subsidiary and affiliated public utility companies, including those in the South of the Louisville Gas & Electric Co., and the Oklahoma Gas & Electric Co., for the year ended June 30, 1930, show an increase of \$2,767,752, as compared with the year ended June 30, 1929, according to John J. O'Brien, president. Gross earnings for the year ended June 30, 1930, amounted to \$155,070,384, as compared with \$150,725,735 for the 12 months ended June 30, 1929, while net earnings amounted to \$74,658,321 for the year ended June 30, 1930, compared with \$71,890,569 for the previous year.

Insurance Men to Meet at Dallas

Appropriate preparations for the annual convention of the National Association of Insurance Agents, October 7 to 10, inclusive, are under way at Dallas in recognition of the fact that this will be the first session in Texas of this national organization. Over 1000 prominent fire and casualty insurance agents from all parts of the country are expected to attend. The Texas Association of Insurance Agents will act as host, with official headquarters at the Adolphus Hotel and auxiliary meetings at the Baker.

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\$12,000,000 GAS LINE PROJECTED

260-Mile Line Would Tap Eastern Kentucky Pools

Ashland, Ky.—Plans are being made by the Central Indiana Gas Co., a subsidiary of the Central Public Service Corp., Chicago, Ill., to construct an 18-inch welded steel pipeline to extend 260 miles from natural gas pools in eastern Kentucky to territory served by the company. The construction is estimated to cost \$12,000,000, and would mark the entrance of the Central Public Service Corp. into the production and piping of natural gas. This company is also the parent organization of the Ohio Valley Electric Railway Co., Huntington, W. Va., and operates public utilities in Ashland, Portsmouth, Ohio, and other cities in central and western states.

Compressor Stations for Gas Line

Amarillo, Tex.—A contract was recently awarded by the Panhandle Eastern Co., a subsidiary of the Missouri Kansas Pipe Line Co., Chicago, Ill., and Kansas City, Mo., to the Fluor Construction Co., Ltd., Los Angeles, Cal., for three compressor stations on the 1200-mile natural gas pipe line under construction from the Texas Panhandle to Indiana, at a cost of approximately \$40,000,000. These stations represent the initial installation of compressor units on the line. Work is well under way on a station near Liberal and one near Louisburg, both in Kansas, the former to house four 1000-horsepower Cooper-Bessemer gas engine compressor units and the latter, five units of the same type. Construction on the third unit is planned to start early in September.

A Successful Cooperative Delivery Service

A cooperative merchants' delivery service, owned by 22 grocers and butchers in a Northern university city of 30,000 population is functioning effectively, according to a representative of the Foodstuffs Division of the Bureau of Foreign and Domestic Commerce. Local merchants inaugurated a cooperative delivery service 23 years ago, the equipment today representing a \$47,000 investment.

A new rate is established annually for each store on the basis of average weekly orders for the preceding year, plus a maintenance charge of \$5 a week. Additional charges are made for C. O. D.'s and special delivery service, one cent for collection for C. O. D. orders

and 15 cents for special delivery orders. Delivery service is rendered to others than members of the company at 15 cents each delivery and 35 cents for special delivery. The merchants' service company provides the grocers with baskets for the orders, which are gathered up from the stores and taken to a central depot for sorting as to routes. There are four deliveries each day.

Copies of a detailed analysis of the company's operations are available without charge from the Foodstuffs Division.

\$3,000,000 Richmond Construction

Richmond, Va.—Four big construction projects to be under way in Richmond and vicinity within the next few weeks call for an expenditure of approximately \$3,000,000. These include an addition to the Federal Reserve Bank Building to cost about \$700,000, and an extension and alterations to the United States postoffice, courthouse and customhouse building, for which \$900,000 is available. Taylor & Fisher, Baltimore, are the architects for the former and the J. A. Jones Construction Co., Charlotte, N. C., is the general contractor. Work on the building is now in progress. Plans for the Federal building were prepared in the office of Jas. A. Wetmore, Acting Supervising Architect of the Treasury Department, Washington, and general contract awarded to the National Construction Co., Atlanta, Ga. Work on this project is expected to be started soon. General contract was recently awarded to the John T. Wilson Co., Inc., Richmond, to erect a group of 13 buildings at Hollybrook, near Richmond, for the St. Joseph's Academy and Orphan Asylum, to cost about \$1,000,000, and work will soon be under way on this project. Carneal, Johnston & Wright, Richmond, are the architects. Likewise, construction is expected to begin soon on a new building for the Virginia Home for Incurables to cost about \$250,000, for which Baskerville & Lambert are the architects and Doyle & Russell, general contractors, both of Richmond.

Over-Subdivision in Cities

With a view to avoiding over-subdivision, a committee from the National Association of Real Estate Boards will institute an investigation of the present and future needs for further subdivision in cities throughout the United States and Canada. Estimates on population growth will be gathered, with data on the total number of recorded subdivision lots not now utilized, and other statistics on which a comprehensive report can be based.

\$1,200,000 PACKING HOUSE IMPROVEMENTS

Two Florida Counties Markedly Active in Handling Citrus Fruits

Winter Haven, Fla.—Figures compiled by George Williams, manager of the Winter Haven Citrus Growers Exchange plant, relating to expenditures for improving existing packing houses in Polk and Highland counties and for building new ones, indicate that Florida fruit interests are looking forward to a successful citrus season this year. According to these figures, new plants and improvements will involve an expenditure of \$1,200,500, the largest amount being expended by the Florence-Villa Packing House, which is erecting a new plant and installing machinery at a cost of \$175,000. Five new packing houses are being built in Highlands County and five in Polk County, while three new canneries are also being built in Polk County. Total construction in this county will involve an estimated expenditure of \$1,000,000.

In addition to the Florence-Villa project, improvements are under way in the two counties at 36 plants, expenditures at these plants involving from \$4000 up to \$125,000.

Jacksonville Produce Dealers Want Cold Storage Terminal

The MANUFACTURERS RECORD is in receipt of a letter from the Florida Fruit and Produce Co., Jacksonville, Fla., stating that the produce dealers of that city "are badly in need of terminal cold storage facilities, such as those operated in Detroit, Omaha and other large centers."

The suggestion was made that it will be of interest to engineering concerns who are equipped to erect such plants to look over the situation, for the Florida Fruit and Produce Co. feels confident that the various local jobbers would cooperate in making the erection of such a plant possible. Mr. N. Dwoskin of the foregoing concern would like to communicate with contractors and engineers who have erected central terminal buildings in different parts of the country.

\$600,000 Water Improvement Bonds

Lawton, Okla.—Water improvement bonds in the amount of \$600,000 have been sold by this city, Todd Sanders, clerk, to the American Trust Co. and R. J. Edwards, Inc., Oklahoma City; Exchange National Co., Tulsa, Okla., and the Mercantile Commerce Co., St. Louis, Mo.



PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close August 22, 1930.

U. S. Engineer Office, Mobile, Ala.—Sealed bids, in duplicate, subject to the conditions contained in the specifications, will be received until 11 o'clock A. M., August 22, 1930, and then publicly opened, for furnishing all labor and materials and performing all work of maintenance dredging in the Mississippi Sound Channel at Pascagoula, Miss., to a depth of 17 feet and a width of 150 feet, involving the removal of approximately 1,500,000 cubic yards of material, including overdepth. Further information on application.

Bids close August 27, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., July 28, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m., August 27, 1930, for furnishing all labor and material required for furnishing and installing new brass water piping, etc., in the U. S. marine hospital at Mobile, Ala. Drawings and specifications may be obtained from the surgeon in charge of the marine hospital at Mobile, Ala., or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close September 2, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., August 4, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m., Sept. 2, 1930, for furnishing all labor and material required for furnishing and installing new brass water piping in the U. S. court house and post office at Charleston, S. C. Drawings and specifications may be obtained from the custodian at the U. S. court house and post office at Charleston, S. C., or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close September 16, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., August 12, 1930.—SEALED BIDS will be opened in this office at 3 p. m., Sept. 16, 1930, for the extension and remodeling (except elevators) of the U. S. post office, court house, etc., at Tulsa, Okla. Drawings and specifications, not exceeding six sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$50.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close August 25, 1930.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., August 1, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m., August 25, 1930, for furnishing all labor and material necessary for furnishing and installing wiring and apparatus for a fire alarm system, a watchman's report and time recording system and a time clock system in the department of commerce building, Washington, D. C. All prospective bidders are hereby notified that any bid submitted in response to this advertisement must be accompanied by a statement of facts in detail of the business and technical organization of the bidder available for the contemplated work, including financial resources and building experience, etc. The United States expressly reserves the right to reject any bid in which the facts as to business and technical organization, financial resources, or building experience, compared with the project bid upon, justify such rejection. The successful bidder will be required to furnish a performance bond of 50% of the contract price. Drawings and specifications may be obtained from this office. JAS. A. WETMORE, Acting Supervising Architect.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close September 15, 1930.

U. S. ENGINEER OFFICE, Montgomery, Ala. Sealed bids, in triplicate, will be received until 2 P. M. September 15, 1930, and then publicly opened, for the construction of one eighty-foot creosoted wood hull. Information upon application.

Bids close September 10, 1930.

Bridges

KENTUCKY STATE HIGHWAY DEPARTMENT DIVISION OF CONSTRUCTION

Frankfort, Ky., August 6, 1930.

Sealed bids will be received by the State Highway Commission at its office, Frankfort, Kentucky, until 2 P. M. on the 10TH day of SEPTEMBER, 1930, for the construction of OHIO RIVER BRIDGE AT ASHLAND. Center span, 739 ft. steel truss span, two side spans, 431 ft. steel truss spans, two 156 ft. steel truss spans, one 72 ft. plate girder, one 46 ft. 5 in. I-beam and eight 30 ft. I-beam spans, steel bents and towers, reinforced concrete piers and abutments and fill approaches.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure with fill approaches.
- (2) Steel superstructures, bents and towers.

GREEN RIVER BRIDGE AT SPOTTSVILLE

One 360 ft., one 161 ft. and four 116 ft. steel truss spans, two 50 ft. reinforced concrete spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete superstructure and substructure work.
- (2) Superstructure—Steel.

BRIDGE OVER CUMBERLAND RIVER AT BURNSIDE

One 291 ft., two 200 ft. and two 126 ft. steel truss spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

Further information, plans, bidding proposals, etc., will be furnished upon application to the Frankfort Office.

Blueprints of this work will be on file for inspection only at the District Engineer's headquarters.

The right is reserved to reject any and all bids.

THE STATE HIGHWAY COMMISSION.
By BEN JOHNSON,
Chairman.

Bids close September 9, 1930.

Reinforced Concrete Bridge

Knoxville, Tenn.

Sealed bids for the construction of a reinforced concrete bridge over the Tennessee River at Henley Street, in the City of Knoxville, Tennessee, will be received by the City of Knoxville, Tennessee, at the office of George R. Dempster, City Manager, until 11 o'clock A. M. September 9, 1930, at which time they will be publicly opened and read.

The bridge will consist of one 165-ft. 0-in. arch span, one 183-ft. 0-in. arch span, one 200-ft. 0-in. arch span, two 212-ft. 0-in. arch spans, one 297-ft. 0-in. arch span, six 50-ft. 0-in. deck girders, walls, abutments and piers, grading and paving of approaches, paving of bridge, installation of water mains, links to support gas mains, telephone conduits and manholes, power conduits and manholes, lighting system for bridge and approaches, with independent system for channel lights and flood lighting system, all as shown on the plans and described in the specifications. The bridge roadway shall be 54 feet between curbs and with a 6-foot sidewalk provided on each side.

Plans and specifications can be examined at the office of the City Manager or the Director of Public Service of the City of Knoxville, Tennessee. Plans, specifications and proposals may be secured upon the payment of \$25.00, which amount will not be refunded.

All proposals must be made out on the forms printed in the specifications and must be accompanied by a certified cashier's check in the amount of \$50,000.00, drawn on a Tennessee National Bank, and made payable to the City of Knoxville, Tennessee, without recourse.

The successful bidder will be required to furnish a construction bond in a sum equaling the amount of the contract, signed by a Surety Company now having a duly authorized representative in the City of Knoxville, Tennessee. The right is reserved to accept or reject any or all proposals and to waive informalities.

(Signed) GEORGE R. DEMPSTER,
City Manager of Knoxville, Tennessee.
W. W. MYNATT,
Director of Public Service.

Bids close September 10, 1930.

Excavation for Drainage

Birmingham, Ala.

Sealed proposals will be received by the undersigned until ten o'clock A. M. Wednesday, September 10, 1930, for certain earth and rock excavation which is proposed to be done by the City of Birmingham on Section Two of Village Creek drainage project (from Avenue F. Ensley, to Avenue W. Ensley).

The approximate principal quantities being as follows: 63,900 Cu. Yds. Earth Excavation; 15,800 Cu. Yds. Rock Excavation.

Specifications may be obtained and plans examined at this office. The right is reserved to reject any or all proposals.

A. J. HAWKINS,
City Engineer.

Bids close September 10, 1930.

Excavation for Drainage

Birmingham, Ala.

Sealed proposals will be received by the undersigned until ten o'clock A. M., Wednesday, September 10, 1930, for certain earth and rock excavation which is proposed to be done by the City of Birmingham on Section One of Valley Creek drainage project (from a point approximately 705 feet southwest of the southwest City Limits of Birmingham to 18th street, southwest).

The approximate principal quantities being as follows: 137,600 Cu. Yds. Earth Excavation; 73,100 Cu. Yds. Rock Excavation.

Specifications may be obtained and plans examined at this office. The right is reserved to reject any or all proposals.

A. J. HAWKINS,
City Engineer.

Bids close September 15, 1930.

Bridges**KENTUCKY STATE HIGHWAY
DEPARTMENT
DIVISION OF CONSTRUCTION**

Frankfort, Ky., August 6, 1930.

Sealed bids will be received by the State Highway Commission at its office, Frankfort, Kentucky, until 2 P. M. on the 15TH day of SEPTEMBER, 1930, for the construction of OHIO RIVER BRIDGE AT MAYSVILLE.

One main suspension span 1060 ft., two side spans 465 ft. each; Kentucky approach: one 78 ft. steel girder span and four 58 ft. steel girder spans; Ohio approach: one 78 ft. steel girder span, five 58 ft. steel girder spans and one 61 ft. steel girder span; concrete anchors, piers, abutments and retaining walls.

Bids will be received on the complete work or separately as follows:

- (1) Concrete anchors, piers, abutments and retaining walls.
- (2) Steel superstructure.

**KENTUCKY RIVER BRIDGE AT
BOONESBORO**

Eight 50 ft. concrete girder spans, two 140 ft. steel truss spans, one 250 ft. steel truss span and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete superstructure and substructure.
- (2) Steel superstructure.

**BRIDGE OVER TENNESSEE RIVER
NEAR PADUCAH**

Three 400 ft. steel truss spans, ten 100 ft. plate girder spans, one 60 ft. plate girder span, twelve 46 ft. I-beam spans, four 45 ft. I-beam spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

**CUMBERLAND RIVER BRIDGE AT
SMITHLAND**

One 500 ft. steel truss span, twelve 100 ft. steel plate girder spans, one 46 ft. I-beam span, one 34 ft. I-beam and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

- (1) Concrete substructure.
- (2) Steel superstructure.

Further information, plans, bidding proposals, etc., will be furnished upon application to the Frankfort Office.

Blueprints of this work will be on file for inspection only at the District Engineer's headquarters.

The right is reserved to reject any and all bids.

THE STATE HIGHWAY COMMISSION.
By BEN JOHNSON,
Chairman.

Bids close September 18, 1930.

Bridges**KENTUCKY STATE HIGHWAY
DEPARTMENT
DIVISION OF CONSTRUCTION**

Frankfort, Ky., August 14, 1930.

Sealed bids will be received by the State Highway Commission at its office, Frankfort, Kentucky, until 2 P. M. on the 18TH day of SEPTEMBER, 1930, for the construction of: KENTUCKY RIVER BRIDGE NEAR TYRONE

One 360-foot steel truss span, two 24-foot steel truss spans, three 60-foot and six 43-foot steel I-beam spans and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

1. Reinforced concrete substructure.
2. Steel superstructure.

**CUMBERLAND RIVER BRIDGE AT
CANTON**

Two 320-foot steel truss spans, two 120-foot steel truss spans, forty-eight 45-foot I-beam spans, steel towers and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

1. Reinforced concrete substructure.
2. Steel superstructure and towers.

**TENNESSEE RIVER BRIDGE AT
EGGERS FERRY**

One 366-foot steel truss span, three 320-foot steel truss spans, two 150-foot steel truss spans, thirty-eight 45-foot I-beam spans, steel towers and reinforced concrete piers and abutments.

Bids will be received on the complete work or separately as follows:

1. Reinforced concrete substructure.
2. Steel superstructure and towers.

OHIO RIVER BRIDGE AT CARROLLTON

One continuous steel truss 1538 feet long, composed of two 769-foot spans, two 382-foot steel truss spans, six 98-foot steel truss spans, twelve 34-foot 6-inch concrete girder spans, reinforced concrete piers, abutments and retaining walls.

Bids will be received on the complete work or separately as follows:

1. Concrete superstructure, piers, abutments and retaining walls.
2. Steel Superstructure.

Further information, plans, bidding proposals, etc., will be furnished upon application to the Frankfort office.

Blueprints of this work will also be on file for inspection only at the District Engineer's headquarters.

The right is reserved to reject any and all bids.

THE STATE HIGHWAY COMMISSION.
By BEN JOHNSON,
Chairman.

Bids close August 26, 1930.

Maryland Highway Work**DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION****NOTICE TO CONTRACTORS**

Baltimore, Md.

SEALED PROPOSALS for building five sections of State Highway as follows:

Anne Arundel Co.—Contract AA-93-72. One Section of State Highway from Gott's on the General's Highway toward Herald Harbor, a distance of 1.36 miles (gravel).

Anne Arundel Co.—Contract AA-93-84. One section of State Highway from the Mayo Road toward Muddy Creek, a distance of 2.0 miles (gravel).

Baltimore Co.—Contract B-162-411. One section of State Highway along the Falls Road from Ridge Church through Shawan toward Butler, a distance of 1.6 miles (concrete shoulders).

Frederick Co.—Contract F-154-62. One section of State Highway from Brunswick toward Olive School, a distance of 1.3 miles (concrete).

Prince George's Co.—Contract P-133-311. One section of State Highway along the Ager and Queen's Chapel Roads from Hyattsville to the D. C. Line, a distance of 2.10 miles (alternate bids for resurfacing with hot and cold bituminous mixtures).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 26th day of August, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 12th day of August, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

CLASSIFIED OPPORTUNITIES

**MINERAL AND TIMBER LANDS, WATER
POWER, MISCELLANEOUS PROPERTIES****FOR SALE**

GRAVEL AND LAND—Three locations, on A. C. L. and S. A. L.
R. B. LANCY, Cheraw, S. C.

FOR SALE—5000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on request.

W. P. HARLEY, Bowling Green, Ky.

MEXICO TIMBER, oil, grazing and agricultural tracts to suit; 152,000 acres, improved, on Railway Coahuila state; two-year oil lease should equal price asked.

WELLSFORD, Laredo, Texas.

FOR SALE—Large water power at sacrifice to quick buyer. Beautiful 170-acre lake. Factory buildings, warehouse, large yard. For further particulars address
CHAS. VAUGHN (Owner), Glen Rock, Pa.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 25c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

**MINERAL AND TIMBER LANDS, WATER
POWER, MISCELLANEOUS PROPERTIES****HARDWOOD LUMBER**

TO FORWARD LOOKING Radio or Furniture Manufacturers: Hardwood Lumber prices are low now, but don't overlook the point that this condition is TEMPORARY. An opportunity is offered to secure a steady FUTURE supply of Southern Hardwoods at MANUFACTURING COST. INSURE your SUPPLY and assure yourself of LOW COST. Address No. 9040, care of Manufacturers Record, Baltimore, Md.

TIMBER AND TIMBER LAND

WE HAVE exclusive sales privilege for more than 500,000 acres of Florida land at sacrifice prices. Also large areas in Georgia and South Carolina. Desirable second growth pine lands; agricultural lands adapted to tung oil and citrus crops, grazing lands, etc. To share in the assured future of Florida and the South INVESTIGATE NOW. THE JAMES D. LACEY COMPANY, 1409 Barnett Bldg., Jacksonville, Fla.

FARM, FRUIT AND TRUCK LAND

FLORIDA

10 ACRES, 9 of which is in 12 year old orange and grapefruit trees. Fronting on paved highway. Price \$5500.00.
JOHN WEHR, Realtor, Clermont, Florida.

ORANGE GROVE of 20 acres in excellent condition; 1/4 mile frontage on beautiful clearwater lake, 1/4 mile road frontage. Price \$15,000.00. JOHN WEHR, Realtor, Clermont, Florida.

LOUISIANA

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

VIRGINIA

FOR SALE—Fancy Stock Farm, 217 acres, Shenandoah Valley, Lee Highway, View National Park. Price \$80,000.
R. S. BURKHOLDER, Waynesboro, Va.

150 ACRES—Land's End Farm, Severn River, near Mobjack Bay, Gloucester County; old brick house, seven rooms.
RICHARD W. JONES, Naxera P. O., Va.

APPLE ORCHARD 15,000 TREES—Best commercial varieties, 12 years old; fine condition. Many excellent buildings and big equipment machinery and stock. Sacrificed to settle estate for \$40,000; easy terms.
WILDER & Co., Charlottesville, Virginia.

SOUTH ISLES PLANTATION

830 acres, 450 acres farming and pasture land, about 300 acres fertile river bottoms, balance woodland and timber. Large, attractive mansion in grove of several acres handsome box wood, shrubbery, flowers and many varieties of trees. Excellent stock barn, tenant house, hog sheds and other outbuildings. Near Lynchburg in good community. Price \$44,000. Full details and illustrated catalogue of other attractive places upon request.
GEO. V. VENABLE & CO., Lynchburg, Va.

SOUTHERN ESTATE

FOR SALE—11-acre estate on St. Johns River opposite Jacksonville, Fla., also 12-room residence in good location, only few blocks from business center of Jacksonville.
A. G. Chappell, P. O. Box 392, Jacksonville, Fla.

SOUTHERN HOMES

OVER 500 ACRES, spring, brook, log cabin, many long leaf pines. Estate preserve. Fine fish pond "full of fish." Low acreage price. G. F. ARCHER, Aiken, S. C.

SOUTHERN HOMES

In the best city in the Carolinas, \$10,000 to \$75,000, according to size and location.
F. C. ABBOTT & CO.,
Charlotte, N. C.
32 years in Charlotte Real Estate.

BUSINESS AND INVESTMENT PROPERTIES

11,000 ACRE tract prospective oil and gas land in heart of Winter Garden District, Dimmit County, Texas. Soil adapted to culture, commercially, of dates, oranges and other citrus fruits; at investment prices. If interested, Owner, Box 656, Houston, Tex.

\$15,000 YEARLY INCOME

Brand New Brick Court Apartment Building; 20 separate and complete apartments just completed building; 100% rented; one of the finest and most modern properties in the State of Virginia; beautiful grounds facing 160 feet on boulevard and across street from finest Woman's College in the South. Price \$150,000; will take in exchange on purchase \$60,000 unincumbered property, purchaser assume \$50,000 first mortgage; balance cash. Get in touch with me before it is too late. BERNARD THOMAS, Agent, 301 State and City Building, Roanoke, Va.

BUSINESS AND INVESTMENT PROPERTIES

A SPLENDID BUSINESS CORNER, with six business stores, 228 feet frontage on First Street, with back street frontage as well, at \$11,000.00.

P. JOHN HART REALTY CORP.,
P. O. Arcade,
Fort Myers, Fla.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

RICH GOLD PLACER. Wants capitalist to finance to work.
W. A. OWENBY,
Mineral Bluff, Ga.

WANTED—A few reliable parties to join us in the organization of a company to manufacture farm machinery. References exchanged. Box 551, Jackson, Tenn.

WANTED—Door and trim manufacturing connections for special manufacture of patented standard articles. Please state manufacturing and shipping facilities if have efficient dry kilns. Box 138, Helena, Ark.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

WANTED—LIVE YOUNG MAN as partner in well-established, good paying poultry business. Must have some capital and come well recommended. A chance of a lifetime to party accepted.
BOX 1200, STUARTS DRAFT, VA.

SEASONED EXECUTIVE, graduate engineer, age 39, with outstanding accomplishments in business, engineering and finance, will invest with services in progressive, growing company. Location and salary secondary to opportunity. Address No. 9038, care of Manufacturers Record, Baltimore.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

HOW ARE YOUR PROFITS RUNNING?
We render a unique service to business men, analyzing their problems of organization, personnel, management, finance, distribution and location. United States Business Extension Bureau, 310 South Michigan Avenue, Chicago, Illinois.

DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING—ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

INDUSTRIAL PLANTS

COMPLETE WOODWORKING PLANT, suitable for furniture or other wood articles. Dry kiln side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

FOR SALE

Home Industry Iron Works, consisting of Foundry, Machine, Boiler and Blacksmith Shops and Real Estate. Located at Mobile, Ala., on the Louisville & Nashville Railroad, near river front. Plant is one of the best in Mobile. Will sell at a bargain. Address MRS. A. KLING, 254 North Jackson Street, Mobile, Ala.

INDUSTRIES WANTED

WELL-LOCATED Southern town wants industry. Will furnish plant, moving expenses, additional capital and other concessions.

INDUSTRIAL SERVICE CORP.,
Asheville, N. C.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services Suite M 629 F, Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS, Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

AGENCIES WANTED

SALES REPRESENTATIVE—Large and valuable acquaintance with foundries, stove manufacturers, Coal mines and supply houses in entire South wishes immediate connection; salary or commission. Highest references. Address W. J. BACH, 1139 So. 14th Street, Birmingham, Ala.

REPRESENTATIVES WANTED

IF YOU HAVE a following among steam boiler operators and are not afraid to work you can make good money by selling our Boiler Compounds on commission basis. We make water analysis and guarantee results on our Water and Metal Treatments. Write for particulars.
SOUTHERN PRODUCTS CORPORATION,
New Orleans, La.

WANTED—HIGH CLASS SALESMEN OR wholesale firm to represent us in restricted territory to the Industrial, Railroad and Contracting trade for the sale of JOINTITE lumber. This product just recently on market. An opportunity for thoroughly reliable representative to make good connection is offered, provided references are satisfactory.

Apply
J. K. GRUNER LUMBER COMPANY,
St. Louis, Mo.

MEN WANTED

WANTED—Salesman experienced in selling lumber or creosoted wood products. Give experience and education. Address No. 9032, care of Manufacturers Record.

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

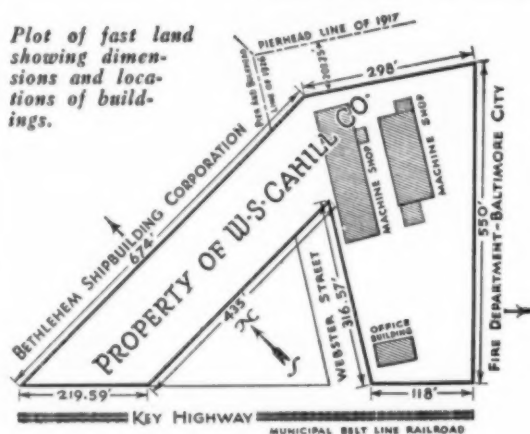
R. W. BIXBY, INC.,
103 Downtown Bldg. Buffalo, New York

FOR SALE Complete Water Front Property As an Entirety



Including all Real Estate, Buildings and Equipment

Plot of fast land showing dimensions and locations of buildings.



Fee simple water front property, situated in the harbor of Baltimore City. Five minutes' ride to center of city. Municipal Belt Line Railroad in front of property on Key Highway. Approximately $4\frac{1}{2}$ acres of fast land and 2 acres riparian rights.

Property of Bethlehem Shipbuilding Corporation adjoining on the North. Property of Fire Department, Mayor and City Council of Baltimore City, adjoining on the Southeast.

For further information, address

W. S. CAHILL COMPANY

Key Highway & Webster St.

BALTIMORE, MD.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH AND STOCKED

BERRY & NORTH 13th STS. BROOKLYN, N.Y.

GUARANTEED

SERVICE PRICES

PIPE NEW

SECOND HAND

Overhauled and Tested
New Threads and Couplings
Established 1904

**Albert & Davidson
Pipe Corp.**

Second Ave., 50th-51st St., Brooklyn, N. Y.
Telephone Sunset 1900

3 PH. 60 CY. GENERATORS

15 KW, 1800 RPM, 120/240 V. Gen. Elec.
50 KW, 1200 RPM, 2300 V., General Elec.
50 KW, 1200 RPM, 230/480 V., Gen. Elec.
82½ KW, 1200 RPM, 2300 V., Elec. Machy. Co.
82½ KW, 1200 RPM, 230/480 V., Elec. Machy.
187 KVA, 900 RPM, 230/480 V., Gen. Elec.
Large stock motors. Write for list.

V. M. NUSSBAUM & CO.
Fort Wayne Indiana

FOR SALE

Ridgway Turbo-Generator
500 kw. direct connected exciter, 60 cycles, 3 phases, 440 volts. Cost \$18,000, used 15 months, excellent condition. Readings on request, price \$6,000.

L. B. SMITH, INC.
Camp Hill, Cumberland County, Penna.

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to ½".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20" and 24".

Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

IRON AND STEEL PIPE

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

Second Hand and New Wrought Iron **PIPE** Overhauled Rethreaded and Coupled

Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-197 Maspeth Ave. Brooklyn, N. Y.

8" Galvanized Corrugated Pipe

6000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. suitable for exhaust drains, water systems, sewers, etc. Have the necessary connecting sleeves. Price considerably under the market.

2000 ft. 12" Naylor black asphalted spiral welded slip joint pipe, slightly used.

MARINE METAL & SUPPLY CO.
167 South Street New York City

JUST RELEASED!**BULLETIN No. 38**

Seventy-two illustrated pages of **ROCKFORD RE-BUILT** motors, generators, air compressors, etc., all thoroughly overhauled and reconditioned. **One Year Guarantee** and reasonably priced.



Send for Your Copy—Mailed Free on Request
Rockford Power Machinery Co.
 "Everything in Motors"
 620-626 Sixth St., Rockford, Ill.

BLUE PRINTING MACHINE FOR SALE

Very reasonable. One Pease Blue printing machine No. 1370. Good condition. Used very little. Address

L. M. McBEE, JR.
 Woodside Building Greenville, S. C.

FOR SALE

2—Skinner Unaflo Engines, direct connected to 2-200 KW Crocker Wheeler DC Generator Sets, 125 to 250 volts, 3 wire with panel, sets are as good as new. Priced at a bargain. Send for full details.

Consolidated Products Company, Inc.
 335 Doremus Avenue, Newark, N. J.
 Mulberry 0600

**Low Cost
Long Life
UNEXCELLED SERVICE**

Three strong factors that have kept Gregory HI-Grade-Rebuilt Motors and Electrical Machinery in the lead since 1893.

Before buying consult Gregory's 80-page illustrated Monthly Bargain Sheet. It will save you Money, Time and Worry. Thousands of buyers have proved to their own satisfaction and profit that it pays to buy

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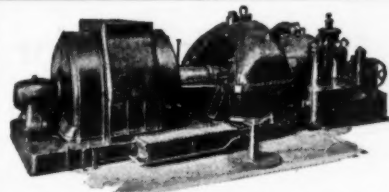
FOR SALE

Approximately 6,000 ft. $\frac{1}{4}$ " New Black pipe in four foot lengths, threaded both ends.

Mary and Pipe and Steel Corp.
 Ostend & Scott Sts., Baltimore, Md.

REAL BARGAINS—New—Never Used—Diesels.
 2—200 HP DeLaVergne, Horizontal Full Diesels, suitable for belted or direct connected service, at less than half regular cost.
 2—66 HP Foss, 2 cyl. Vertical complete Diesel Power Units, with radiator cooling equipment, etc., at exactly $\frac{1}{3}$ regular cost.

ZELNICKER IN ST. LOUIS
 Rails, Equipment, Machinery, Tanks, Sheet Steel Piling, Pipe, Etc.



10,000 KVA Turbo typical of 4 units recently delivered and similar to the following.

PRACTICALLY NEW 100% INTERNAL EXCELLENCE WESTINGHOUSE CONDENSING TURBO UNITS COMPLETE—INSTANT SHIPMENT

1—15,000 KW CW-218 Frame—1800 RPM
 1—10,000 KVA CW-118 Frame—1800 RPM
 1—7,500 KW CW-78 Frame—1800 RPM
 1—5,500 KVA CW-76 Frame—3600 RPM
 1—4,000 KVA CW-76 Frame—3600 RPM
 3—1,700 KVA CW-26 Frame—3600 RPM
 1—1,500 KVA CW-16 Frame—3600 RPM
 (3 phase, 60 cycle, standard voltages)

A.S.M.E. CODE DESIGN BOILERS 200-225 lbs.

2—1500 H.P. Cross Drum B & W
 2—2650 HP Ladd Bent Tube
 6—627 HP Stirling Plant, modern stokers, auxiliaries

8—504 HP B & W Vertical Steel headers, et al.
CONDENSERS MOTOR GENERATOR SETS

Verification and proof of new equivalent condition easily reached on personal inspection
 50% to 100% saving on investment

Send us list of your requirements—or what you have for sale

COME TO CINCINNATI



**Machine Tools
Power Equipment Boilers
Electric Motors**
DELTA EQUIPMENT CO.
 148 N. 3rd St. PHILADELPHIA

**MACHINERY FOR SALE OF THE
York River Shipbuilding Corporation
West Point, Virginia**

This plant was established for building wooden ships for government during the war. One air compressor and lot of air tools, also quite an assortment of tools and machinery.

ADDRESS

YORK RIVER SHIPBUILDING CORP.
 West Point Virginia

IF IT'S NEW PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
 34th Street and C. R. R. of N. J. Bayonne, N. J.

Let us help you sell your machinery

You may replace certain machinery in your plant this year. Let us help you sell the equipment you will no longer need by advertising it in

THE RESALE DEPARTMENT
Manufacturers Record Baltimore, Md.

FOR SALE AT A BARGAIN

6—200 H.P. 72" x 20', Walsh & Weidner H.R.T. Boilers. 84—4" tubes. 130 lbs. steam pressure allowed by Hartford Steam Boiler Co. Will be sold singly, in pairs or the entire lot.

Can Be Seen in Operating Condition

TENNESSEE EASTMAN CORPORATION
 —OWNERS—
 Kingsport, Tenn.

**BOILERS
FOR SALE**

25 Steam Boilers. Several Water Tube Boilers, ranging in sizes from 200 H. P. to 400 H. P. Several Return Tubular Boilers ranging in sizes from 125 H. P. to 150 H. P. Can be seen in operation.

No Reasonable Offer Will Be Refused.

ATLANTIC ICE & COAL CO.
 ATLANTA, GEORGIA

Ask Us for a List of Customers to Whom We Have Sold Over 100,000 Kva. in Transformers.

There must be a reason.



We sell, buy, rewind and maintain only transformers. Your selection can be made from our stock of over 5000 transformers.

The **ELECTRIC SERVICE CO. Inc.**
America's Used Transformer Clearing House
212 Walnut Street
Cincinnati, Ohio



We buy modern type transformers—any size—any quantity.
Wanted especially—high voltage large capacity transformers in carload shipment.

REFRIGERATING MACHINERY FOR SALE

20 Ammonia Compressors, steam driven with either simple corliss, tandem compound, cross compound. Some have horizontal ammonia compressors, others have vertical ammonia compressors, ranging in sizes from 50 to 500 tons refrigerating capacity.

No Reasonable Offer Will Be Refused.

ATLANTIC ICE & COAL CO.
ATLANTA, GEORGIA

GENERATOR SETS

2—50 KVA, 220 volt, 3 phase, 60 cycle Ridgway Generators, direct connected to Ridgway Engines.
1—500 KW, 2300 volt, 3 phase, 60 cycle Turbo Generator set with condenser.

BOILERS

2—500 H. P. Heine Water Tube, 100 lbs. pressure, A.S.M.E. code.
2—180 H. P. Keeler water tube, 200 lbs. pressure, A.S.M.E. code.
1—150 H. P. 72" x 18' Hor. ret. Tubular, 150 lb. pressure, A.S.M.E. code.

HEATERS

2—1000 H. P. Cochrane open type Feed Water Heaters.

METAL WORKING TOOLS

No. 4 Millis & Jones single end punch belt drive, 36" throat, cap. 1 3/4" x 1".
No. 3 Southwark single end punch, 24" throat arch jaw, motor drive, cap. 3/4" x 3/4".
8' Covington squaring shear 1/4" cap.
2000 lb. Chambersburg double frame steam forging hammer.
1000 lb. Niles Bement Pond single frame forging hammer.
No. 1 Hazel belt driven hammer cap. 2" x 2".
20 spindle Natco multiple drill No. 2 taper.
16 spindle Bausch multiple drill No. 2 taper.
34" Aurora upright drill, No. 5 taper motor drive.

THE O'BRIEN MACHINERY CO.
113 North Third Street
Philadelphia, Pa.

RAILROAD AND CONTRACTORS' EQUIPMENT

FOR SALE OR RENT

- 3—Keystone Graders, Model No. 4.
- 1—19 ton Monarch 3 wheel Steam Roller.
- 1—8 ton Buffalo Tandem Steam Roller.
- 2—10 ton Buffalo Springfield Steam Rollers.
- Large stock Rock Crushers, Screens and Elevators.

JOHNSON & HOEHLER
Fernwood, Del. Co. Pennsylvania

BUY OR RENT

STEAM SHOVEL

- 1—Thew 1-yd. Crawler Type Steam Shovel.

TRUCK CRANES

- 1—6 1/2-ton Universal, equip. with Christy Crawler.

This outfit was purchased new April, 1928.

GASOLINE CRANES

- 1—No. 206 P.&H. Crane, 40-ft. boom.
- 1—K-2 Comb. Link-Belt Crawler Crane, 40-ft. boom and 1-yd. shovel.
- 1—K-1 Link Belt Crawler, 40-ft. boom.
- 1—Mead-Morrison Gas Crawler Crane, 35-ft. boom. New 1929.
- 2—K-35 Link-Belt Crawler Cranes, 40-ft. booms.

PILE HAMMERS

All sizes—McKiernan-Terry—for rent or sale.
1—No. 400 Vulcan Pile Extractor.

Just real dependable **REBUILT EQUIPMENT**—
Guaranteed Condition—Prompt Delivery from Stock

Howard W. Read Corporation

Terminal Sales Bldg.

800 North Delaware Ave., Philadelphia, Pa.

15 miles of 36" gauge industrial track and gasoline locomotives

- 15—Miles 36" gauge 25 lb. portable industrial Track with 7 Riveted ties per 15 ft. section with slp joint tie and Fish plate Connections.

- 5—Whitcomb 8 ton, 36" Gauge gasoline Locomotives.

Priced low for direct shipment
from present location in Florida.

Send for stock list of rebuilt air compressors, cranes, cars, hoists and shovels.

EQUIPMENT CORP'N of AMERICA
1166 So. Washtenaw Ave.,
Chicago, Ill.

866 Horn Bldg.
Philadelphia

666 Empire Bldg.
Pittsburgh

SHEET STEEL PILING FOR SALE

25 and 30 foot Lackawanna sheet steel piling with corners sufficient for three piers. Good shape, been used one job.

AMERICAN HARDWARE EQUIP. CO.
Charlotte, N. C.

FOR SALE

Byer's Bear Cat Crane used less than 3 months. Perfect condition.

Samler Machinery & Equipment Co.
208 W. Pratt St. Baltimore, Md.

NEW AIR TOOLS AT 1/2 PRICE

13 size B. "Thor" air motor metal drills (cap'y. up to 2")
48 size C. "Thor" air motor metal drills
20 size 42 "Thor" air motor metal drills
9 size — "Thor" air motor metal drills (Cap'y. up to 9/16")
11 size BW "Thor" air motor metal drills (Cap'y. up to 2")
15 size 8 "Thor" air motor close corner metal drills.
14 4X "Little Giant" air motor metal drills.
12 2X "Little Giant" air motor metal drills.
80 No. 40 "Keller Master" riveting hammers, also several other makes and sizes.

These are absolutely brand new tools on which we will save you 50%.

W. M. SMITH & COMPANY
Box 1709 Birmingham, Ala.



RAILROAD AND CONTRACTORS' EQUIPMENT



RELAYING RAILS — SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.
Pennsylvania Bldg. Philadelphia, Pa.

Make Your Dollars Work

Sell that machinery lying idle in your plant. It may just fit somebody's need.

Advertise it in
the
RESALE DEPARTMENT

MANUFACTURERS RECORD
Baltimore, Md.

FOR SALE

P. & H. Model 206, $\frac{1}{2}$ -yd. Dragline.
Byers, 10-ton Caterpillar Crane, $\frac{1}{2}$ -yd. Clam.
O. & S. 23 $\frac{1}{2}$ -ton Loco. Crane 50' Boom.
16—12-yd. Western Steel Beam Dump Cars.
10—50-ton capy. All Steel Twin Hopper Cars.
75-ton, 20x26" 6-Driver Switcher, A. S. M. E.
50-ton, 18x24" 6-Driver Switcher.
92-ton, 20 $\frac{1}{2}$ x28" Mikado (2-8-2) BUILT 1922.
25-ton, 13x20" 4-Driver Sad. Tank.
56-ton, 18x24" 4-Driver Sad. Tank.
WE HAVE OVER FORTY LOCOMOTIVES IN
STOCK. REBUILT AND READY
ALL TYPES. 10 TO 100 TONS

Southern Iron & Equipment Co.,
Atlanta, Ga.

RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may
have material in stock near you.

WE BUY RAILS FIT TO RE-LAY
ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.
New Frogs and Switches at low prices.

100 Tons

85 lb. A.S.C.E RELAYING RAILS

HENRY LEVIS & COMPANY
Commercial Trust Bldg. Philadelphia

Rebuilt and Reconditioned EXCAVATORS

For Sale, or Lease With Option to Buy

Marion No. 32 1 Yard Steam Shovel on full
crawlers. Ready for immediate delivery. An
exceptional bargain, located at Pittsburgh.

P&H Model 400 $\frac{1}{2}$ yard Clamshell, 35 foot
boom. Has been very carefully reconditioned. At
Hoboken plant.

Bucyrus 31-B Steam Shovel. In excellent shape.
At Hoboken plant.

P&H Model 400 Dragline, $\frac{1}{2}$ yard, in good
shape, ready to go. Located at Chicago plant.

Northwest Model 105 1 yard Crane. Fully
reconditioned. At Hoboken plant.

P&H Model 206 $\frac{1}{2}$ yard Shovel. Thoroughly
overhauled and in very good operating condition.
At Hoboken plant.

LIBERAL TERMS

Write or wire at our expense if you do
not see what you want

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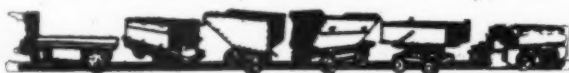
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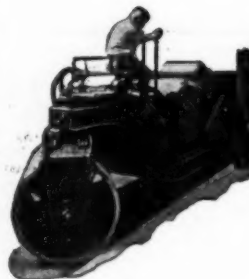
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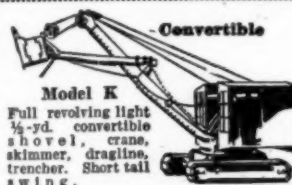


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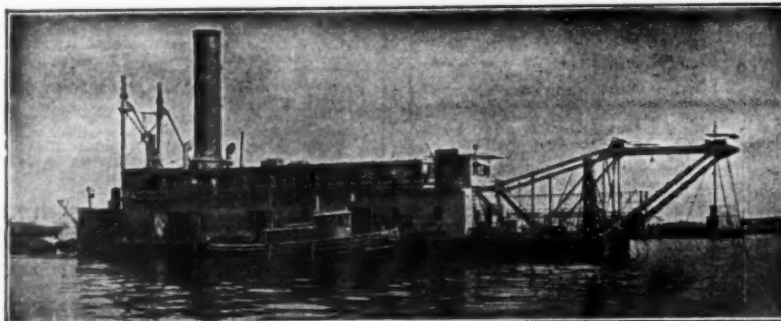
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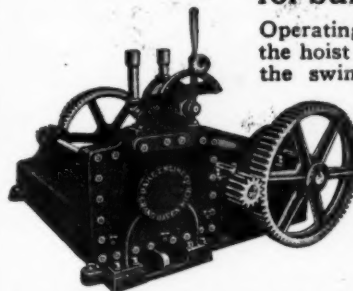
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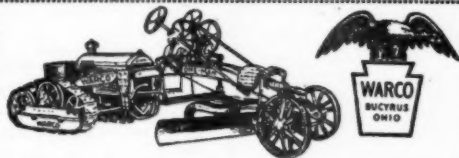


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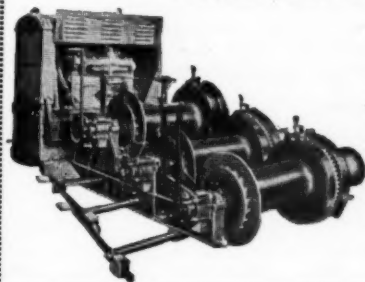
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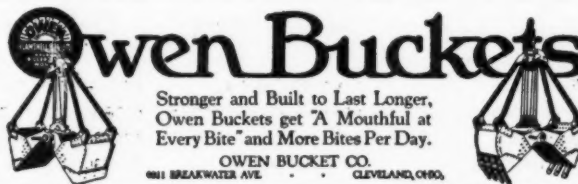
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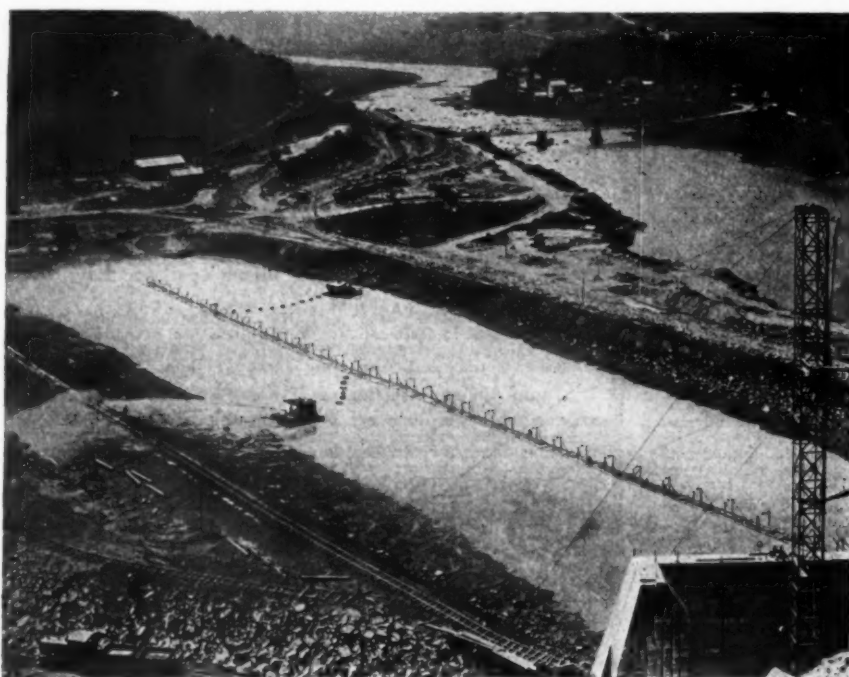
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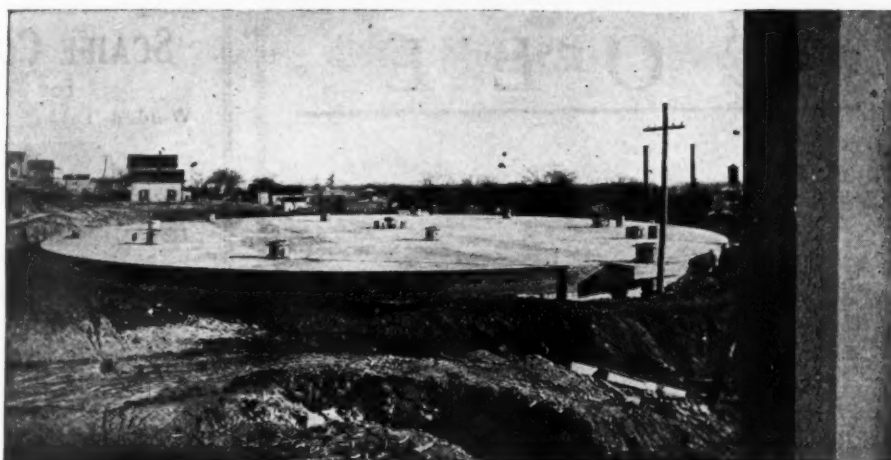


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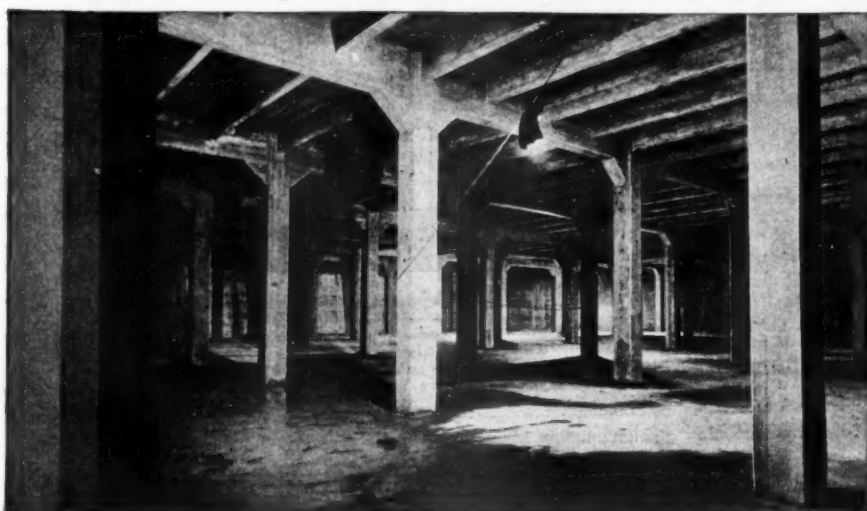
(Right) Roof ready for covering of three feet of earth

(Photographs taken in 1917)

(Below) Inside of covered reinforced concrete reservoir



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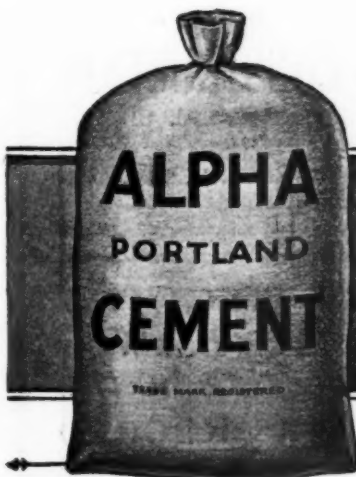


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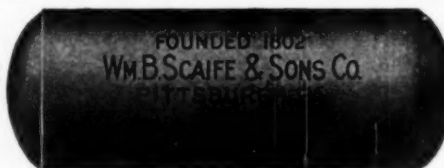
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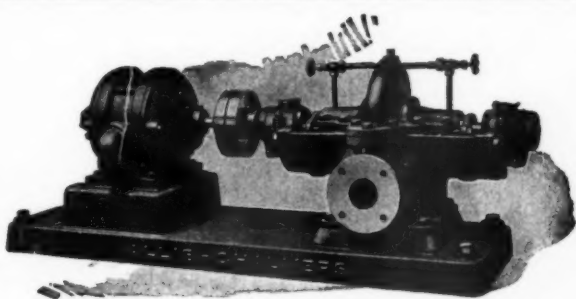
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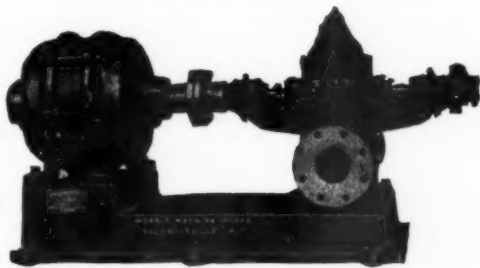
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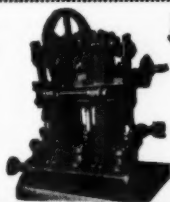
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AN ABSOLUTELY TIGHT DURABLE PIPE

The lap riveted seam repeats its cycle every twelve inches, forming a broad-stiffening rib of great value, and makes Root pipe one-third stronger than any other type of pipe construction. Light weight and simple connections reduce transportation handling and erection costs. Suitable for conveying water, air, gas, exhaust steam and powdered coal.

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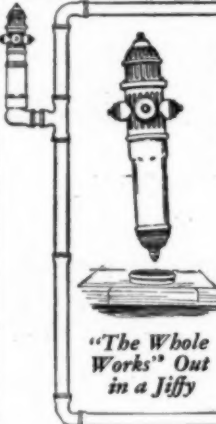
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LIGHT, heat and water form the important triangle in greenhouse operation. In all three, pipe plays an important part. In addition to heating and sprinkler lines, pipe is being used more and more in construction of framework. The important point is that practically all piping used about a greenhouse is subjected to alternate wetting and drying (approximating atmospheric conditions) and, as a consequence, atmospheric corrosion is at work practically all the time.

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The increasing use of NATIONAL Copper-Steel Pipe for greenhouse service clearly indicates that operators are taking advantage of satisfactory results secured from their earlier installations or from observations of tests made by others. It is the simplest and most economical means of increasing the life of the pipe and, thereby, makes a more efficient and economical system. Write for Bulletin No. 11, describing—

NATIONAL COPPER-STEEL PIPE

The Original Copper-Steel Pipe

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PORTLAND, MAINE, can testify to the economy of large diameter CAST IRON PIPE



The "Q-check" symbol shown above has been adopted as the trade mark of The Cast Iron Pipe Research Association.

NEARLY a score of years ago, Portland, Maine, built a complete new water supply system. The chief supply line consisted of a cast iron conduit 42 inches in diameter and 17 miles long.

Recent examination shows this line to be in perfect condition. Flow tests indicate that the carrying capacity of this great main is unimpaired. During its more than 18 years of service it has never been shut down for a single moment. And as to repair charges, there are none. Moreover, the perfect condition of the pipe gives promise of a century of service still ahead.

The reason for the durability which results in the economy of cast iron pipe is its resistance to rust and corrosion. Water and gas mains of ferrous metal (iron and steel) with the exception of cast iron, disintegrate from rust. Cast iron pipe is the only ferrous metal pipe practicable for underground mains that rust will not destroy.

For information regarding cast iron pipe for water, gas, culverts, sewerage or industrial needs write to Thomas F. Wolfe, Research Engineer, 309 People's Gas Building, Chicago, Illinois.

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N. J.; Warren Foundry and Pipe Company, 11 Broadway, New York.

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Reading 5-Point Pipe — the pipe that defies Time's onslaughts as does no other—protects Bullock's Wilshire Department Store, Los Angeles. John Parkinson and Donald B. Parkinson, architects.

When 5-Point Pipe Goes IN Operating Costs Go DOWN

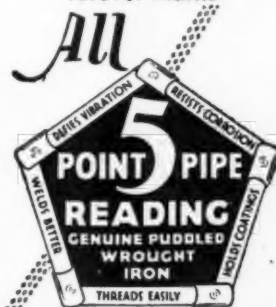
Slash off a goodly share of the operating costs of any building in which Reading 5-Point Pipe is installed. With this rust-resisting, longer-lasting pipe, you can definitely figure that pipe maintenance costs—an important item of operation—will be from one-third to one-half lower than ordinary pipe. That's why it pays to keep Reading 5-Point Pipe in your specifications, even when other items must be sacrificed.

Reading 5-Point Pipe is made by the country's largest manufacturer of Genuine Puddled Wrought Iron—the pipe material that defies Time—That Tough Old Tester. More than eighty years of use in the buildings and industries of the Nation prove that it lasts. Our nearest representative will gladly give you the profitable facts.

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Use only Reading 5-Point Nipples with Reading 5-Point Pipe... you'll know them by the indented spiral band.

For Your Protection,
This Indented Spiral
Forever Marks



Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

Classified Reference Index for Buyers

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Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.)

Black & Co., Baltimore, Md.
Ernst & Ernst, New York, N. Y.
Hollowell Gorham & Co., Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS and SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.
Lacey & Co., Jas. D., New York, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

Chicago Pneumatic Tool Co., New York, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Wheeling, Pa.

AIR CONDITIONING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo.

AIRHEATERS.

Babcock & Wilcox Co., New York

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

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Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fittings.

Vogt Mch. Co., Henry, Louisville, Ky.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

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Ballinger Co., Philadelphia, Pa.
Conard & Buzby, Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Ballinger Co., Philadelphia, Pa.
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Boney, Leslie N., Wilmington, N. C.
Chase, Wm., J. J., Atlanta.
Lindsay, Claude H., Jackson, Miss.
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Milburn, Helster & Co., Wash. D. C.
Meyer Co., Tilghman, Allentown, Pa.
Simmons, Inc. & Associates, B. Stanley, Washington, D. C.
Preacher & Co., Inc., G. Lloyd, Atlanta.
Shrine & Co., J. E., Greenville, S. C.
Wheeler, Walter H., Minneapolis, Minn.
Widmer Engineering Co., St. Louis, Mo.

—(Golf Course, Landscape.)

Draper, E. S., Charlotte, N. C.
Spoon & Lewis, Greensboro, N. C.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

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Chase Brass & Copper Co., Waterbury, Conn.

—Iron Work.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)

Allen-Sherman-Hoff Co., Phila., Pa.

—Sluicing Systems.

Allen-Sherman-Hoff Co., Phila., Pa.

—Storage Tanks (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

ASPHALT.

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—Filler.

American Limestone Co., Knoxville, Tenn.

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Black & Co., Baltimore, Md.
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Hollowell Gorham & Co., Greensboro, N. C.
Le Baron, E. T., Jacksonville, Fla.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

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Austin Machinery Corp., Muskegon, Mich.
Harnischfeger Corp., Milwaukee, Wis.
National Equipment Corp. (Insley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Bank of Alabama, The, Ensley, Ala.
Bank of New York & Trust Co., N. Y.
First and Merchants National Bank, Richmond, Va.
Maryland Trust Co., Baltimore, Md.
Mercantile Trust Co., Baltimore, Md.

BARGES (Steel.)

American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa.

BARB (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.
Conners Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville, Tenn.
Republic Steel Corp., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis, and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.
Republic Rubber Co., Youngstown, Ohio.

—Dressing.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Conveyors.

Barber-Greene Co., Aurora, Ill.

BENCH LEGS.

Angle Steel Stool Co., Plainwell, Mich.

—Drawers (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BENCHES AND TABLES.

(Steel.)
Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corp., Youngstown, Ohio.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Drill and Reamer.)

Angle Steel Stool Co., Plainwell, Mich.

—(Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain.)

Harrington Co., The, Philadelphia, Pa.

—TACKLE for Wire and Manila Rope.

Patterson Co., W. W., Pittsburgh.

BLOWERS and Exhaust Fans.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

BLOW PIPE SYSTEMS.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.
Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
Charleston Dry Dock & Machine Co., Charleston, S. C.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Combustion Engr. Corp., New York, N. Y.
Hedges Walsh Weldner Co., Chattanooga, Tenn.
Lombard Iron Works & Supply Co., Augusta, Ga.
Oil City Boiler Works, Oil City, Pa.
Schaffel's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Vogt Mch. Co., Henry, Louisville, Ky.

—(Oil.)

Babcock & Wilcox Co., New York

—(Stoker Unit.)

Oil City Boiler Works, Oil City, Pa.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.
Randle Machinery Co., The, Cincinnati, O.
Zelnicke Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Babcock & Wilcox Co., New York
Harrison-Walker Refractories Co., Pittsburg.

—Tubes.

Babcock & Wilcox Co., New York
Boiler Tube Co. of America, Pittsburgh.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Steel Corp., Youngstown, Ohio.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Garraway & Co., S. G., Chicago.
Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Mercantile Trust Co., Baltimore, Md.
Nurven & Co., John, Chicago, Ill.

Provident Savings Bank and Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BORING (Core.)

Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

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Copper and Brass Research Assn., New York.
Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Face.)

Alabama Clay Prod. Co., Birmingham

—(Fire.)

Alabama Clay Prod. Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.
Dec Co., Wm. E., Oak Hill, Ohio.
Taylor Sons Co., Charles, Cincinnati.

—(Vitrified, Paving.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Operating Machinery.)

Karle Gear & Machine Co., Phila., Pa.

—Timber.

Amer. Creosoting Co., Louisville, Ky.
Industrial Lumber Co., Elizabeth, La.
Kirby Lumber Co., Houston, Texas.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Creosoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Champion Bridge Co., Wilmington, O.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Richmond Struct. Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.

—(Machine.)

Moccasin Brushing Co., Chattanooga, Tenn.

BUBBLERS.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.

—(Dredging, Excavating, Sewer, etc.)

Hayward Co., The, New York, N. Y.
Monaghan Mfg. Corp., Chicago, Ill.
Kiesler Co., Jos. F., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.
Webster & Weller Mfg. Companies, Chicago, Ill.

—(Orange Peel.)

Hayward Co., The, New York, N. Y.

—(Ore Handling.)

Hayward Co., The, New York, N. Y.
Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

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Barstow & Co., W. S., Reading, Pa.
Cowper Co., Inc., The John W., Richmond, Va.
Moyer Co., Tilghman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)
Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable Sheet Metal.)
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.

BULKHEADS.
Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.
Trackson Co., Milwaukee, Wis.

BUSHINGS (Brass and Bronze.)
Moccasin Bushing Co., Chattanooga, Tenn.

BUSINESS METHODS.
Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CABLES (Stud Link.)
Woodhouse Chain Works, Trenton, N. J.
—and Wire (Electric.)
American Steel & Wire Co., Balto., Md.
Okonite Co., New York, N. Y.
Roehling's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)
Broderick & Bascom Rope Co., St. Louis
Lidgerwood Mfg. Co., Elizabeth, N. J.
Sauerman Bros., Chicago, Ill.

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Grasselli Chemical Co., Inc., Birmingham, Ala.

CAN and Box-Making Machinery (Tin.)
Bliss Co., E. W., Brooklyn, N. Y.

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Barber-Greene Co., Aurora, Ill.
—Pullers.
Webster & Weller Mfg. Companies, Chicago, Ill.

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Atlas Car & Mfg. Co., The, Cleveland, O.
Easton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Southern Iron & Equipment Co., Atlanta.
—Steps (Safety.)
Irving Iron Works Co., Long Island City, N. Y.

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Mountain States Steel Foundries, Parkersburg, W. Va.

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Fuller Lehigh Co., Fullerton, Penna.

—(Gray Iron.)
Fuller Lehigh Co., Fullerton, Penna.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
National Cast Iron Pipe Co., Birmingham, Ala.
Roanoke Iron & Bridge Works, Inc., Roanoke, Va.
Salem Fdry. & Mach. Wks., Salem, Va.
U. S. Pipe & Foundry Co., Burlington, N. J.

—(Malleable Iron and Steel.)
Timken Roller Bearing Co., Canton, O.

—(Semi-Steel.)
Salem Fdry. & Machine Works, Salem, Va.

—(Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.
Deemer Steel Casting Co., New Castle, Del.
Lunkenheimer Co., Cincinnati, Ohio.

CEILING (Metal.)
Milcor Steel Co., Milwaukee, Wis.

CEMENT (High Temperature.)
Harbison Walker Refractories Co., Pittsburg, North American Refractories Co., Cleveland, Ohio.

—(Portland.)
Alpha Portland Cement Corp., Birmingham, Ala.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Assn., Chicago, Ill.

—Guns.
Cement-Gun Co., Inc., Allentown, Pa.

—Machinery.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

CHAIN BLOCKS (See Blocks, Chain.)

CHAINS (Dredge, Quarry, Steam Shovel.)
Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.

—(High Speed Roller.)
Diamond Chain & Mfg. Co., Indianapolis

—(Silent Drive.)
Diamond Chain & Mfg. Co., Indianapolis
Morse Chain Co., Ithaca, N. Y.

—(Sprocket.)
Chain Belt Co., Milwaukee, Wis.
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Welded.)
Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opera and Theatre.)
Andrews Co., A. H., Chicago, Ill.

—and Stools (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CHEMICALS.
Davison Chemical Co., Baltimore, Md.
Grasselli Chemical Co., Inc., Birmingham, Ala.

CHEMISTS, CHEMICAL ENGINEERS (Analytical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Meigs, Bassett & Slaughter, Phila., Pa.
Picard Laboratories, The, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Fort Worth, Texas.
Stillman & Van Stelen, New York.
Wiley & Co., Inc., Baltimore, Md.
—(Consulting, Paper Industry.)
Froehling & Robertson, Inc., Richmond, Va.

CHIMNEYS (Concrete.)
Rust Engineering Co., Birmingham, Ala.

—(Radial Brick.)
Rust Engineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.
Electric Storage Battery Co., Phila., Pa.

CHLORINATORS.
Rees, S. P., Atlanta.

CIRCUIT BREAKERS.
I. T. E. Circuit Breaker Co., Phila., Pa.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING.
Draper, E. S., Charlotte, N. C.
Ludlow Engineers, Winston-Salem, N. C.

CLOCKS (For all purposes.)
Kaiser Klock Co., L. E., Baltimore, Md.

—(Watchman's Portable.)
Davis-Paradis Watchman's Clock Corp., New York, N. Y.
Kaiser Klock Co., L. E., Baltimore, Md.

CLUTCHES (Friction.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—and Ash-Handling Mch.
Allen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Webster & Weller Mfg. Companies, Chicago, Ill.

—Bunkers (Cast Iron.)
Allen-Sherman-Hoff Co., Phila., Pa.

—Tipples.
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

COCKS (Service.)
Merco Nordstrom Valve Co., San Francisco, Calif.

COKE.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)
U. S. Pipe & Foundry Co., Burlington, N. J.

COMPRESSORS.
Union Steam Pump Co., Battle Creek, Mich.

—(Gasoline Extraction.)
Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Block Machinery.)
Blystone Mfg. Co., Cambridge Springs, Pa.

—Construction (Reinforced.)
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Rust Engineering Co., Birmingham, Ala.

—Floor Slabs.
American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Information Only.
Portland Cement Assn., Chicago, Ill.

—Mixers.
Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Lansing Co., Lansing, Mich.

—Pipe Machinery (See Pipe Machinery, Concrete.)

—Placing Equipment.
National Equipment Corp. (Insley Division), Milwaukee, Wis.

—Road Curing.
McEverlast, Inc., Los Angeles, Cal.

—Roofing Tile.
American Cement Tile Mfg. Co., Pittsburgh, Pa.

CONDENSERS.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Manitowoc Iron Works Co., Manitowish, Mich.
Union Steam Pump Co., Battle Creek, Mich.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)
Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Bridge)
Kansas City Bridge Co., Kansas City, Mo.
Snare Corp., Frederick, New York.

—(Drainage and Dredging.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

—(Electrical.)
Walker Electrical Co., Atlanta, Ga.
Warner Service Co., Knoxville, Tenn.
Webb Electric Co., Anderson, S. C.

—(Foundations and Dams.)
Calligan & Co., A. H., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.

—(General.)
Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Charleston Constructors, Inc., Charleston, S. C.
Cornell-Young Co., Inc., Macon, Ga.

Cowper Co., Inc., The John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Saville, Inc., Allen J., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Industrial Buildings.)
Angle-Blackford Co., Greensboro, N. C.
Barstow & Co., W. S., Reading, Pa.
Blair, Algernon, Montgomery, Ala.
Cowper Co., Inc., The John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—Mill Village.
Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)
Gomez & Co., P. L., Atlanta, Ga.
Jennings & Co., Floyd, Atlanta, Ga.

—(Power Piping.)
Poe Piping & Heating Co., Greenville, S. C.

—(Power Plants.)
Snare Corp., Frederick, New York, N. Y.

—(Railroad.)
Calligan & Co., A. H., Richmond, Va.
Cornell-Young Co., Inc., Macon, Ga.

—(Reinforced Concrete.)
Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.

—(Rust Proofing.)
Dixie Electro Plating Co., Houston, Tex.

—(Sewerage and Waterworks.)
Gridley Constr. Co., Lee A., Knoxville, Tenn.

Hardaway Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

—(Sprinkler System.)
Poe Piping & Heating Co., Greenville, S. C.

—(Swimming Pool.)
Rees, S. P., Atlanta, Ga.

—(Water-Works.)
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—Machinery and Supplies.

(New.)
Bay City Shovels, Inc., Bay City, Mich.
Weller & Co., Birmingham, Ala.
W-K-M Co., Inc., Houston, Texas.

—Machinery and Supplies.

(Used.)
Christian & Co., J. R., Houston, Tex.
Cohen, Chas. F., Lima, O.
Equip. Sales & Rentals Co., Pittsburgh
Guion, Harry P., New York, N. Y.
Johnson & Hoehler, Fernwood, Pa.
Marine Metal & Supply Co., New York.

CONTRACT WORK WANTED.

(See following classifications:)
Boiler and Tank Works.
Castings.
Forgings.
Foundry and Machine Shops.
Machinery (Special).
Ornamental Iron Work.
Patterns.
Sheet Metal Work.
Structural Steel and Iron.
Welding Plants.

CONVEYING AND ELEVATING MACHINERY.

Barber-Greene Co., Aurora, Ill.
Chain Belt Co., Milwaukee, Wis.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Universal Crusher Co., Cedar Rapids, Iowa.
Webster & Weller Mfg. Companies, Chicago, Ill.

CONVEYORS (Portable, Power-Driven.)
Clark Tractor Co., Battle Creek, Mich.

CORRESPONDENCE SCHOOLS.
International Correspondence Schools, Scranton, Pa.

COST SERVICE.

Le Baron, E. T., Jacksonville, Fla.

COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.

—Mill Machinery.

Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS.

Veeder-Root, Inc., Hartford, Conn.

COUPLINGS.

Goldens' Fdy. & Mach. Co., Columbus, Ga.

—(Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

CRANES.

Austin Machinery Corp., Muskegon, Mich.

National Equipment Co. (Insley, Koehring, Parsons), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

Whiting Corp., Harvey, Ill.

—(Cantilever.)

Whiting Corp., Harvey, Ill.

—(Crawler.)

Harnischfeger Corp., Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Crawling Tractor.)

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Electric Traveling.)

Harnischfeger Corp., Milwaukee, Wis.

Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

Whiting Corp., Harvey, Ill.

—(Full Circle Steam and Electric.)

Austin Machinery Corp., Muskegon, Mich.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Gasoline.)

Harnischfeger Corp., Milwaukee, Wis.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

—(Jib.)

Whiting Corp., Harvey, Ill.

—(Locomotive.)

Bucyrus-Erie Co., Erie, Penna.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

Universal Crane Co., Lorain, Ohio.

—(Traveling, Hand Power.)

Harrington Co., The, Philadelphia, Pa.

Whiting Corp., Harvey, Ill.

CRAWLERS (Tractor.)

Aiddell Co., W. A., Bucyrus, Ohio.

Frackson Co., Milwaukee, Wis.

CREOSOTED MATERIALS.

Amer. Creosote Wks., Inc., New Orleans

Delaware Wood Preserving Co., Phila

Savannah Creosoting Co., Savannah, Ga

CREOSOTED TIMBER.

Ayer & Lord Tie Co., Chicago, Ill.

Brown Wood Preserving Co., Louisville, Ky.

CREOSOTE OIL.

Amer. Creosote Wks., Inc., New Orleans

Ayer & Lord Tie Co., Inc., Chicago.

CREOSOTING (Wood Materials.)

Amer. Creosote Wks., Inc., New Orleans

Amer. Creosoting Co., Inc., Louisville, Ky.

Brown Wood Preserving Co., Louisville, Ky.

Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Hattiesburg, Miss.

Savannah Creosoting Co., Savannah, Ga.

Taylor-Colquitt Co., Spartanburg, S. C.

Wales Wood-Preserving Co., Norfolk, Va.

CROSS-ARMS (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans

Amer. Creosoting Co., Inc., Louisville, Ky.

Savannah Creosoting Co., Savannah, Ga.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Eppinger & Russell Co., New York, N. Y.

Savannah Creosoting Co., Inc., Savannah, Ga.

Taylor-Colquitt Co., Spartanburg, S. C.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York, N. Y.

CRUSHED STONE (Road Concrete and Ballast.)

American Limestone Co., Knoxville, Tenn.

Boxley & Co., W. W., Roanoke, Va.

CRUSHERS (Coal and Coke.)

Fuller Lehigh Co., Fullerton, Pa.

—Rock.

Universal Crusher Co., Cedar Rapids, Iowa.

CRUSHING and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Day Pulverizer Co., Knoxville, Tenn.

Fuller Lehigh Co., Fullerton, Pa.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulverizer Co., Chicago, Ill.

Universal Crusher Co., Cedar Rapids, Iowa.

W-K-M Co., Inc., Houston, Texas.

CULVERT PIPE (Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham

Cast Iron Pipe Research Assn., Chicago

U. S. Pipe & Foundry Co., Burlington, N. J.

—(Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.

Armco Culvert Mfrs. Assn., Middletown, O.

Dixie Culvert & Metal Co., Atlanta, Ga.

Dixie Culvert Mfg. Co., Little Rock, Ark.

Louisiana Corr. Culvert Co., Baton Rouge, La.

Tenn. Metal Culvert Co., Nashville, Tenn.

Western Metal Mfg. Co., Houston, Texas.

CUTTERS (Wire Rope.)

Leechen & Sons Rope Co., A., St. Louis.

CYLINDERS (Compressed Air Gas.)

Janney, Jr., Jos. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa.

DERRICKS and Derrick Fittings.

Lidgerwood Mfg. Co., Elizabeth, N. J.

Sasgen Derrick Co., Chicago, Ill.

—(Used.)

Galer Equipment Corp., New York, N. Y.

DESKS (School.)

Andrews Co., A. H., Chicago, Ill.

—(Steel Factory.)

Angle Steel Stool Co., Plainwell, Mich.

DITCHING MACHINERY.

Barber-Greene Co., Aurora, Ill.

Bay City Shovels, Inc., Bay City, Mich.

Harnischfeger Corp., Milwaukee, Wis.

Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Owen Bucket Co., The, Cleveland, O.

DOORS (Bronze.)

Michaels Art Bronze Co., Covington, Ky.

—(Fire.)

Merchant & Evans Co., Philadelphia, Pa.

Richards-Wilcox Mfg. Co., Aurora, Ill.

—(Fireproof, Air Chamber.)

Wilson Corp., The J. G., New York.

—(Kalamine.)

Moeschl-Edwards Corr. Co., Cincinnati, Ky.

—(Rolling, Steel and Wood.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Mahon Co., E. C., Detroit, Mich.

Moeschl-Edwards Corr. Co., Cincinnati, Ky.

Wilson Corp., The J. G., New York.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Tubular Steel.)

Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.

Austin Machinery Corp., Muskegon, Mich.

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Monaghan Mfg. Corp., Chicago, Ill.

National Equipment Corp. (Kochring, Insley), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Sauerman Bros., Chicago, Ill.

Thew Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

DREDGES (Dipper, Elevator, Hydraulic.)

Bay City Shovels, Inc., Bay City, Mich.

Bucyrus-Erie Co., Erie, Pa.

Ellicott Machine Corp., Baltimore, Md.

Morris Machine Wks., Baldwinville, N. Y.

DREDGING (River and Harbor Improvement.)

Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

—Machinery.

American Steel Dredge Co., Fort Wayne, Ind.

Ellicott Machine Corp., Baltimore, Md.

Hayward Co., The, New York.

DRILLING CONTRACTORS.

Mott Core Drilling Co., Huntington, W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa.

Southern Drilling Co., Saltville, Va.

Sprague & Henwood, Inc., Scranton, Pa.

DRILLS (Artesian Well.)

Virginia Machinery & Well Co., Inc., Richmond, Va.

—(Electric.)

Chicago Pneumatic Tool Co., New York

Sullivan Mch. Co., Chicago.

—(Pneumatic.)

Chicago Pneumatic Tool Co., New York

Ingersoll-Rand Co., New York, N. Y.

Sullivan Machinery Co., Chicago, Ill.

DRINKING FOUNTAINS.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)

Ripley Fdy. & Mch. Co., Ripley, Ohio.

DRY KILNS and Equipment.

Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.

American Process Co., New York, N. Y.

DUMP TRUCK BODIES and HOISTS.

Easton Car & Construction Co., Easton, Pa.

Lee Trailer & Body Co., Inc., Plymouth, Ind.

DUSTPROOFING (Concrete.)

Sonnenborn Sons, Inc., L., New York

DYESTUFFS.

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)

Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

Hercules Powder Co., Inc., Wilmington, Del.

ECONOMIZERS (Fuel.)

Babcock & Wilcox Co., New York

ELECTRICAL Instruments and Supplies.

Adams Electric Co., Frank, St. Louis

General Electric Co., Schenectady, N. Y.

Western Electric Co., New York City

—Machinery (Generators, Motors, etc., New.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Elliotte, Howard C., Miami, Fla.

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Rockford Power Machy. Co., Rockford, Ill.

Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

—Machinery (Generators, Motors, etc., Used.)

Delta Equipment Co., Philadelphia, Pa.

Electric Service Co., Cincinnati, Ohio.

Electrical Equip. Co., Raleigh, N. C.

General Electric Co., Schenectady, N. Y.

Gregory Electric Co., Chicago.

Nashville Industrial Corp., Old Hickory, Tenn.

Nussbaum & Co., V. M., Ft. Wayne, Ind.

O'Brien Machinery Co., The, Phila., Pa.

Rockford Power Machy. Co., Rockford, Ill.

Stewart Elec. Co., John A., Cincinnati.

—Machinery Repairing (Motors, Generators, etc.)

Electric Service Co., Cincinnati, Ohio.

Gregory Electric Co., Chicago.

ELECTRIC LIGHTING.

General Electric Vapor Lamp Co., Hoboken, N. J.

ELECTRIC SHOVELS (See Shovels.)**ELEVATOR Cables.**

Leechen & Sons Rope Co., A., St. Louis

—(Equalizers.)

Evans Elevator Equalizer Co., Bedford, Ind.

ELEVATORS (Electric.)

American Elevator & Machine Co., Inc., Louisville, Ky.

Millner Co., St. Louis, Mo.

—(Hand and Belt Power.)

American Elevator & Machine Co., Inc., Louisville, Ky.

Millner Co., St. Louis, Mo.

—(Hydraulic.)

American Elevator & Machine Co., Inc., Louisville, Ky.

—(Portable.)

O. K. Clutch & Machy. Co., Columbia, Pa.

ENGINEERS (Airports.)

MacElwhee & Crandall, Inc., Cambridge, Mass.

Shaw Co., Russell B., St. Louis, Mo.

—(Appraisal.)

Ballinger Co., Philadelphia, Pa.

Batty & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thorndike, Boston, Mass.

Ford, Bacon & Davis, Inc., New York

Harrison, Wm. Henry, Washington, D. C.

Lockwood Greene Engrs., Inc., New York City.

Ludlow Engineers, Winston-Salem, N. C.

Main, Inc., Chas. T., Boston, Mass.

Sanderson & Porter, New York, N. Y.

Wadleigh & Bailey, Washington, D. C.

White Engineering Corp., J. G., New York

Wiedeman and Singleton, Inc., Atlanta

Williamson, Lee H., Charlottesville, Va.

—(Aviation.)

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)

Atlantic Bridge Co., Greensboro, N. C.

Billingsley, James W., New Orleans, La.

Fay, Spofford & Thorndike, Boston, Mass.

Freeland, Roberts & Co., Nashville, Tenn.

Gardner & Howe, Memphis, Tenn.

Greiner & Co., J. E., Baltimore, Md.

Hardaway Contracting Co., Columbus, Ga.

Hedrick

(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Batty & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Floyd & Lechridge, Dallas, Texas.
 Gardner & Howe, Memphis, Tenn.
 Hardaway Contracting Co., Columbus, Ga.
 Harza Engineering Co., Chicago.
 Hedrick Inc., Ira G., Hot Springs Nat'l. Park, Ark.
 Leo, William S., Charlotte, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Muller & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 Wheeler, Walter H., Minneapolis, Minn.
 White Engr. Corp., J. G., New York.

(Drainage and Irrigation.)

Floyd & Lechridge, Dallas, Texas.
 Ford, Bacon & Davis, Inc., New York.
 Fuller & McClintock, New York, N. Y.
 Hills Co., George B., Jacksonville, Fla.
 Ludlow Engineers, Winston-Salem, N. C.

(Efficiency.)

Barstow & Co., W. S., Reading, Pa.
 Ernst & Ernst, New York, N. Y.

(Electrical.)

Batty & Kipp, Inc., Chicago, Ill.
 Engineering Service Corp., Houston, Texas.
 Hoosier Engineering Co., Chicago, Ill.
 Leo, William S., Charlotte, N. C.
 Lockwood Greene Engrs., Inc., New York City.
 Main, Inc., Chas. T., Boston, Mass.
 Muller & Co., J. E., Greenville, S. C.
 Sanderson & Porter, New York, N. Y.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 Webb Electric Co., Anderson, S. C.
 White Co., Gilbert C., Durham, N. C.
 Wiley & Wilson, Lynchburg, Va.

(Electric-Light and Power Plants.)

Batty & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.
 Leo, William S., Charlotte, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Muller & Co., J. E., Greenville, S. C.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Stone & Webster, Inc., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.
 White Co., Gilbert C., Durham, N. C.

(Flood Control.)

Floyd & Lechridge, Dallas, Texas.
 Harza Engineering Co., Chicago.

(Forest.)

Lacey & Co., Jas. D., New York, N. Y.

(Gas.)

Byllesby Engineering and Management Corp., Chicago, Ill.
 Ford, Bacon & Davis, Inc., New York.
 Harrison, William Henry, Washington, D. C.

(Geological.)

De Kalb, Courtenay, New York City.
 Froehling & Robertson, Richmond, Va.
 Harrison, William Henry, Washington, D. C.
 Wadleigh & Bailey, Washington, D. C.

(Harbor Improvements.)

Billingsley, James W., New Orleans, La.
 Engineering Service Corp., Houston, Texas.
 Fay, Spofford & Thorndike, Boston, Mass.

(Heating.)

Batty & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Wiley & Wilson, Lynchburg, Va.

(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Floyd & Lechridge, Dallas, Texas.
 Fuller & McClintock, New York, N. Y.
 Harza Engineering Co., Chicago.
 Main, Inc., Chas. T., Boston, Mass.

(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
 Batty & Kipp, Inc., Chicago, Ill.
 Byllesby Engineering and Management Corp., Chicago, Ill.
 Harza Engineering Co., Chicago.
 Leo, William S., Charlotte, N. C.
 Ludlow Engineers, Winston-Salem, N. C.
 Main, Inc., Chas. T., Boston, Mass.
 Mees & Mees, Charlotte, N. C.
 Platt, William M., Durham, N. C.
 Sanderson & Porter, New York, N. Y.
 Scofield Engineering Co., Phila., Pa.
 Strine & Co., J. E., Greenville, S. C.
 Tucker & Laxton, Charlotte, N. C.
 White Engineering Corp., J. G., New York.

(Ice and Refrigerating.)

Engineering Service Corp., Houston, Texas.

(Industrial Plants.)

Ballinger Co., Philadelphia, Pa.
 Barstow & Co., W. S., Reading, Pa.
 Batty & Kipp, Inc., Chicago, Ill.
 Biggs Eng. Co., W. E., Knoxville, Tenn.
 Billingsley, James W., New Orleans, La.
 Charleston Constructors, Inc., Charleston, S. C.
 Conner, Older & Quinlan, Inc., Chicago.
 Converse & Co., J. B., Mobile, Ala.
 Fay, Spofford & Thorndike, Boston, Mass.
 Gardner & Howe, Memphis, Tenn.
 Greiner & Co., J. E., Baltimore, Md.
 Herty, Charles H., New York City.

Hills Co., George B., Jacksonville, Fla.
 Lockwood Greene Engrs., Inc., New York City.

MacElwaine & Crandall, Inc., Cambridge, Mass.

Main, Inc., Chas. T., Boston, Mass.

Mees & Mees, Charlotte, N. C.

Morgan Constr. Co., Worcester, Mass.

Muller & Co., J. E., Greenville, S. C.

Prescher & Co., Inc., G. Lloyd, Atlanta.

Sanderson & Porter, New York, N. Y.

Scofield Engineering Co., Phila., Pa.

Simmons, Inc. & Associates, B. Stanley, Washington, D. C.

Strine & Co., J. E., Greenville, S. C.

Smith, Elroy G., Augusta, Ga.

Stone & Webster, Inc., Boston, Mass.

Turner, C. A. P., Minneapolis, Minn.

Widmer Engineering Co., St. Louis, Mo.

Williamson, Lee H., Charlottesville, Va.

(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.

Herty, Charles H., New York City.

Lockwood Greene Engrs., Inc., New York City.

Wadleigh & Bailey, Washington, D. C.

(Inspection and Tests.)

Barrow-Agee Laboratories, Memphis, Tenn.

Conard & Buzby, Burlington, N. J.

Dow & Smith, New York, N. Y.

Flood & Co., Walter H., Chicago, Ill.

Froehling & Robertson, Inc., Richmond, Va.

Hunt Co., Robert W., Chicago, Ill.

Picard Laboratories, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southwestern Laboratories, Ft. Worth, Texas.

(Landscapes.)

Draper, E. S., Charlotte, N. C.

(Lighting.)

Batty & Kipp, Inc., Chicago, Ill.

Byllesby Engineering and Management Corp., Chicago, Ill.

Ford, Bacon & Davis, Inc., New York.

General Electric Vapor Lamp Co., Hoboken, N. J.

Wiley & Wilson, Lynchburg, Va.

(Mechanical.)

Batty & Kipp, Inc., Chicago, Ill.

Charlton & Davis, Ft. Lauderdale, Fla.

Engineering Service Corp., Houston, Texas.

Invicta Engineering Co., Birmingham, Ala.

Leo, William S., Charlotte, N. C.

Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass.

Mees & Mees, Charlotte, N. C.

Meigs, Bassett & Slaughter, Phila., Pa.

Sanderson & Porter, New York, N. Y.

Wiley & Wilson, Lynchburg, Va.

(Metal Protection.)

Dixie Electro Plating Co., Houston, Tex.

(Mining. See Engineers, Geological.)**(Municipal.)**

Billingsley, James W., New Orleans, La.

Conner, Older & Quinlan, Inc., Chicago.

Dow & Smith, New York, N. Y.

Freeland, Roberts & Co., Nashville, Tenn.

Harrub Engr. Co., C. N., Nashville, Tenn.

Hills Co., George B., Jacksonville, Fla.

Howerton Engineering Co., Asheville, N. C.

Knowles, Inc., Morris, Pittsburg, Pa.

Ludlow Engineers, Winston-Salem, N. C.

McCrary Co., The J. B., Atlanta, Ga.

Spoon & Lewis, Greensboro, N. C.

White Co., Gilbert C., Durham, N. C.

(Paving and Roads.)

Billingsley, James W., New Orleans, La.

Dow & Smith, New York, N. Y.

Freeland, Roberts & Co., Nashville, Tenn.

Harrub Engr. Co., C. N., Nashville, Tenn.

Howerton Engineering Co., Asheville, N. C.

Ludlow Engineers, Winston-Salem, N. C.

Platt, William M., Durham, N. C.

Spoon & Lewis, Greensboro, N. C.

White Co., Gilbert C., Durham, N. C.

(Production.)

Scofield Engr. Co., Phila., Pa.

(Public Service Properties.)

Byllesby Engineering and Management Corp., Chicago, Ill.

Ford, Bacon & Davis, Inc., New York.

Fuller & McClintock, New York, N. Y.

Knowles, Inc., Morris, Pittsburg, Pa.

Main, Inc., Chas. T., Boston, Mass.

Sanderson & Porter, New York, N. Y.

Scofield Engineering Co., Phila., Pa.

Stone & Webster, Inc., Boston, Mass.

White Engineering Corp., J. G., New York.

(Railroad.)

Mees & Mees, Charlotte, N. C.

(Reinforced Concrete Bridges, Buildings, etc.)

Atlantic Bridge Co., Greensboro, N. C.

Ballinger Co., Philadelphia, Pa.

Batty & Kipp, Inc., Chicago, Ill.

Fay, Spofford & Thorndike, Boston, Mass.

Freeland, Roberts & Co., Nashville, Tenn.

Greiner & Howe, Memphis, Tenn.

Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass.

Steel & Leiby, Knoxville, Tenn.

Tucker & Laxton, Charlotte, N. C.

Turner, C. A. P., Minneapolis, Minn.

Wheeler, Walter H., Minneapolis, Minn.

(Research and Development.)

Invicta Engineering Co., Birmingham, Ala.

(Sanitary.)

Harza Engineering Co., Chicago.

(Sewage Disposal Plants.)

Fuller & McClintock, New York, N. Y.

Ludlow Engineers, Winston-Salem, N. C.

McCrary Co., The J. B., Atlanta, Ga.

Platt, William M., Durham, N. C.

Wiedeman and Singleton, Inc., Atlanta.

(Sewerage and Waterworks.)

Conard & Buzby, Burlington, N. J.

Conner, Older & Quinlan, Inc., Chicago.

Ford, Bacon & Davis, Inc., New York.

Fuller & McClintock, New York, N. Y.

Hardaway Contracting Co., Columbus, Ga.

Harrub Engr. Co., C. N., Nashville, Tenn.

Hills Co., George B., Jacksonville, Fla.

Howerton Engineering Co., Asheville, N. C.

Knowles, Inc., Morris, Pittsburg, Pa.

Ludlow Engineers, Winston-Salem, N. C.

Mees & Mees, Charlotte, N. C.

Platt, William M., Durham, N. C.

Sanderson & Porter, New York, N. Y.

Spoon & Lewis, Greensboro, N. C.

Tucker & Laxton, Charlotte, N. C.

White Co., Gilbert C., Durham, N. C.

White Engineering Corp., J. G., New York.

Wiedeman & Singleton, Inc., Atlanta, Ga.

Williamson, Lee H., Charlottesville, Va.

(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.

Hedrick, Inc., Ira G., Hot Springs Nat'l. Park, Ark.

Hills Company, Geo. B., Jacksonville, Fla.

Lockwood Greene Engrs., Inc., New York City.

Simmons, Inc. & Associates, B. Stanley, Washington, D. C.

Turner, C. A. P., Minneapolis, Minn.

Virginia Bridge & Iron Co., Roanoke, Va.

(Textile Mills.)

Ballinger Co., Philadelphia, Pa.

Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass.

Strine & Co., J. E., Greenville, S. C.

(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

(Ventilating and Heating.)

Biggs Eng. Co., W. E., Knoxville, Tenn.

Wiley & Wilson, Lynchburg, Va.

(Water Supply.)

Floyd & Lechridge, Dallas, Texas.

ENGINES (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

(Gas and Gasoline.)

Light Mfg. & Fdry. Co., Pottstown, Pa.

Nove Engine Co., Lansing, Mich.

Sterling Engine Co., Buffalo, N. Y.

(Gas and Oil.)

Chicago Pneumatic Tool Co., New York.

(Hoisting.)

Mundy Hoisting Engine Co., J. S., Newark, N. J.

(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

(Oil.)

Ingersoll-Rand Co., New York, N. Y.

Continental Gln Co., Birmingham, Ala.

(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Cole Mfg. Co., B. D., Newnan, Ga.

Leffel & Co., The James, Springfield, O.

Lombard Iron Works & Supply Co., Augusta, Ga.

Morris Machine Works, Baldwinville, N. Y.

Schofield's Sons Co., J. S., Macon, Ga.

ENVELOPES.

Young & Seldon Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)

Spring, Charles Herbert, Greensboro, N. C.

EXCAVATING MACHINERY.

Bay City Shovel, Inc., Bay City, Mich.

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland.

Monaghan Mfg. Corp., Chicago, Ill.

National Equipment Corp. (Kochring, Insley, Parsons), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Owen Bucket Co., The, Cleveland, Ohio.

Thew Shovel Co., The, Lorain, Ohio.

Universal Power Shovel Co., Milwaukee, Wis.

EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Thew Shovel Co., Lorain, Ohio.

(Dragline. See Dragline Excavators.)**(Trench.)**

Barber-Greene Co., Aurora, Ill.

Bay City Shovels, Inc., Bay City, Mich.

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee

National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.
Vogt Mch. Co., Henry, Louisville, Ky.
—and Flanged Fittings.
Grinnell Co., Inc., Providence, R. I.

FLOOR (Cork Composition.)
Congoleum-Nairn Inc., Kearny, N. J.

—(Hardwood, Maple, Oak.)
Kirby Lumber Co., Houston, Tex.
Nashville Hardwood Flooring Co., Nashville, Tenn.

—(Linoleum.)
Congoleum-Nairn Inc., Kearny, N. J.

—(Northern Hard Maple.)
Stolt Hardwood Co., Oconto, Wis.

—(Open Steel.)
Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

—Covering.
Congoleum-Nairn Inc., Kearny, N. J.

—Hardener (Concrete.)
Sonneborn Sons, Inc., L. New York.
Stonhard Co., Phila., Pa.

—Plates and Stair Treads.
American Pressed Steel Co., Phila., Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Steel (For Concrete Culverts, Roads, Streets.)
Blaw-Knox Co., Pittsburgh, Pa.

—Wax.
Congoleum-Nairn Inc., Kearny, N. J.

—(Wood) Preservative.
Stonhard Co., Phila., Pa.

FLUSH-TANK SIPHONS.
Pacific Flush-Tank Co., New York, N. Y.

FLYER PRESSERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FLYERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FORGINGS (Drop.)
Vogt Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)
Blaw-Knox Co., Pittsburgh, Pa.

FOUNDATION MASONRY.
Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.
Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Giamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Moccasin Bushing Co., Chattanooga, Tenn.
Mountain States Steel Foundries, Parkersburg, W. Va.

FOUNDRY Equipment and Supplies.
Chain Belt Co., Milwaukee, Wis.
Hill & Griffith Co., The, Cincinnati, O.
Whitting Corp., Harvey, Ill.

—Facings (Talc and Soapstone.)
Hill & Griffith Co., The, Cincinnati, O.

FREIGHT RATE ADJUSTMENTS.
Allen, Charles B., New York City.

FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.)
Union Tank & Pipe Co., Los Angeles, Cal.

FURNACE LININGS.
North American Refractories Co., Cleveland, Ohio.

FURNACES (Industrial.)
Combustion Engr., Corp., New York City.
—(Water-Cooled.)
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.

—Steel and Iron.
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Steel Corp., Youngstown, Ohio.

GALVANIZING (Cadmium Plating.)
Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)
Bessemer Galvanizing Works, Birmingham, Ala.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Newport News Shipbuilding & Drydock Co., Newport News, Va.

GAS HOLDERS.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.

—Producers.
Gas-O-Flame Stove Works, Fort Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., B. D., Philadelphia, Pa.

GASOLINE and KEROSENE.
Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)
Armco Culvert Mfg. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfg. Co., Little Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.
Jenkins Bros., New York, N. Y.

GEARS.
DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Phila., Pa.
General Electric Co., Schenectady, N. Y.
—(Worm Reduction.)
DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

—(Used.)
Electrical Equip. Co., Raleigh, N. C.
Gregory Electric Co., Chicago.
Nashville Ind. Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., Phila., Pa.
Randall Machinery Co., The, Cincinnati, O.
Stewart Elec. Co., John A., Cincinnati, O.

GEOLOGISTS. (See Engineers, Geological.)

GLASS (Art.)
Binswanger & Co., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)
Binswanger & Co., Inc., Memphis, Tenn.
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Window.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.

—(Wire.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Phila., Pa.

GRADERS (Elevating.)
Caterpillar Tractor Co., San Leandro, Calif.

—(One Man Motor.)
Riddell Co., W. A., Bucyrus, Ohio.

GRAPHITE.
Dixon Crucible Co., Jas., Jersey City, N. J.

GRATES and Grate Bars.
Schofield's Sons Co., J. S., Macon, Ga.
Vogt Machine Co., Henry, Louisville, Ky.

GRATING (Area, Flooring, Sidewalk.)
Bates Steel Corp., Walter, Gray, Ind.
Blaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The, Baltimore, Md.
Roxley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.

GREASE CUPS.
Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Electric.)
Chicago Pneumatic Tool Co., New York

—(Gypsum, Limestone, etc.)
Raymond Bros. Impact Pulv. Co., Chicago

GRINDING MACHINERY (Flexible Shaft.)
Strand & Co., N. A., Chicago, Ill.

—Wheels.
Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

GUNS (Hydraulic.)
Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Ingalls Iron Works, Birmingham, Ala.

HANGERS (Door, All Kinds.)
Richards-Wilcox Mfg. Co., Aurora, Ill.
—(Line Shaft.)
American Pulley Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic, Gulf & Pacific Co., New York.

HARDWARE (Door.)
Richards-Wilcox Mfg. Co., Aurora, Ill.

HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I.
Poe Piping & Heating Co., Greenville, S. C.
Skinner Bros. Mfg. Co., St. Louis, Mo.

—Systems.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HOISTING MACHINERY.
Lidgerwood Mfg. Co., Elizabeth, N. J.

HOISTS (Air Portable.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

—(Chain.)
Harrington Co., The, Philadelphia, Pa.

—(Electric.)
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
National Equipment Corp. (C. H. & E Division), Milwaukee, Wis.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Hand Power.)
O. K. Clutch & Mch. Co., Columbia, Pa.

—(Steam.)
Clyde Iron Works Sales Co., Duluth, Minn.
Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)
Cannors Steel Co., Birmingham, Ala.

HOPPERS (Aggregate, Measuring and Weighing.)
Blaw-Knox Co., Pittsburgh, Pa.

HOSE (Rubber.)
Republic Rubber Co., Youngstown, Ohio.

HOTELS.
Helms Hotel Systems, St. Louis, Mo.
Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.
Eichleay, Jr. Co., John, Pittsburgh.

HULLS (Steel.)
American Steel Dredge Co., Fort Wayne, Ind.

HUMIDIFYING AND DRYING EQUIPMENT.
Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HYDRANTS (Fire.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Myers & Bro. Co., The, F. E., Ashland, O.
Vogt Brothers Mfg. Co., Louisville, Ky.
Wood & Co., B. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)
Alabama Power Co., Birmingham, Ala.
Central Power & Light Co., San Antonio
Georgia Power Co., Atlanta, Ga.
Texas Power & Light Co., Dallas, Texas.

ICE and Refrigerating Machinery and Supplies.
Ingersoll-Rand Co., New York, N. Y.
Vogt Mch. Co., Henry, Louisville, Ky.

INCINERATORS.
Duplex Hanger Co., Cleveland, Ohio.

INCORPORATORS.
Corporation Service Co., Wilmington, Del.
Delaware Registration Trust Co., Wilmington, Del.

INJECTORS.
Jenkins Bros., New York, N. Y.
Randall Machinery Co., The, Cincinnati, O.

INSULATING MATERIALS.
General Electric Co., Schenectady, N. Y.
Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Gay & Co., W. O., New York City.
Hanchett Bond Co., Inc., The, Chicago, Ill.
Mercantile Trust Co., Baltimore, Md.
Nuveen & Co., John, Chicago.
Peabody & Co., Chicago.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati, O.

IRON.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(Ingot, For Culverts, etc.)
American Rolling Mill Co., Middletown, O.

JANITOR SUPPLIES.
Clark, Lloyd T., Southern Pines, N. C.

JOINTS (Pipe.)
Leadite Co., The, Philadelphia, Pa.



THE research and resources of The Carborundum Company have combined in producing this new wheel for grinding tungsten carbide tools.

It is known as the "Green-Grit" Wheel—

A free, clean-cutting wheel—

A wheel that has all of the qualities necessary for the grinding of this sensational new material.

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Scientifically bonded, they have given us a wheel that keeps sharp—that really penetrates—that readily solves the problem of grinding all brands of tungsten carbide.

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JOIST HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

KETTLES (Pavers and Roofers.)

Honhorst Co., Jos., Cincinnati, O.

LADDERS (Rolling.)

Myers & Bro. Co., The F. E., Ashland, O.

—(Wooden.)

Dayton Safety Ladder Co., Cincinnati, O.

Patent Scaffolding Co., Chicago, Ill.

LAMPS (Incandescent.)

General Electric Vapor Lamp Co., Hoboken, N. J.

Western Electric Co., New York City.

LATH (Metal.)

Ingalls Iron Works Co., Birmingham, Ala.

LATHES.

Sebastian Lathe Co., Cincinnati, Ohio.

LIGHTING (Factory and Mill.)

General Electric Vapor Lamp Co., Hoboken, N. J.

—Fixtures (Electric.)

Benson Brass & Chandelier Works, Kansas City, Mo.

Western Electric Co., New York City.

LININGS (Flue, Fire Clay.)

Lee Clay Products Co., Clearfield, Ky.

Owensboro Sewer Pipe Co., Owensboro, Ky.

—(Tube Mill.)

Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jaspe.)

Congoleum-Nairn Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Selden Co., Baltimore, Md.

LOADING and UNLOADING MACHINERY (Portable.)

Barber-Greene Co., Aurora, Ill.

Northwest Engineering Co., Chicago, Ill.

LOCOMOTIVES (Compressed Air.)

Porter Co., H. K., Pittsburgh, Pa.

—(Fireless Stored Steam.)

Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)

Porter Co., H. K., Pittsburgh, Pa.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Industrial.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Mining.)

Porter Co., H. K., Pittsburgh, Pa.

Whitcomb Co., Geo. D., Rochelle, Ill.

—(Railway.)

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta

Whitcomb Co., Geo. D., Rochelle, Ill.

LOOM PICK COUNTER

Veeder-Root, Inc., Hartford, Conn.

LUBRICANTS.

Dixon Crucible Co., Jos., Jersey City, N. J.

Gulf Refining Co., Pittsburgh, Pa.

LUBRICATORS (Force Feed.)

Lunkenheimer Co., The, Cincinnati, O.

LUMBER (Ceiling, Flooring, Siding.)

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—(Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf States Creos. Co., Battlesburg, Miss.

Savannah Creos. Co., Savannah, Ga.

—(Heavy Construction, Pitch, Pine, etc.)

Brooks-Scanlon Corp., Foley, Florida.

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—Yellow Pine.

Brooks-Scanlon Corp., Foley, Florida.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

MACHINERY (Special.)

Bliss Co., E. W., Brooklyn, N. Y.

Earle Gear & Machine Co., Phila., Pa.

Fornholts Machinery Co., St. Louis, Mo.

General Machine Works, York, Pa.

Whiting Corp., Harvey, Ill.

—and Supplies (New and Used.)

Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh

Heineken Engineering Corp., New York

Marine Metal & Supply Co., New York

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The, Phila., Pa.

Randle Machinery Co., The, Cincinnati, O.

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

MACHINE TENDERS (Steel.)

Angie Steel Steel Co., Plainwell, Mich.

—(Tools.)

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Sebastian Lathe Co., Cincinnati, Ohio.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

MAIL CHUTES.

Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.)

Georgia Marble Co., Tate, Ga.

MATERIAL ELEVATORS.

National Equipment Corp. (Insley, C. H.

& E.), Milwaukee, Wis.

METAL-Cutting Machinery.

Earle Gear & Machine Co., Phila., Pa.

—Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

MILL MACHINERY and SUPPLIES.

Lombard Iron Works & Supply Co., Augusta, Ga.

MINING MACHINERY.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

MIXERS.

National Equipment Corp. (Koehring,

T. L. Smith, Kwik-Mix), Milwaukee,

Wis.

—(Asphalt.)

Erie Machine Shops, Erie, Pa.

—(Hot.)

Koehring Co., Milwaukee, Wis.

—(Mortar.)

Chain Belt Co., Milwaukee, Wis.

Jaeger Machine Co., Columbus, Ohio.

—(Plaster.)

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Roschert Press Co., Syracuse,

N. Y.

Jaeger Machine Co., Columbus, Ohio.

MORTAR INGREDIENT.

Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pitts-

burgh, Pa.

MOTOR TRUCKS.

International Harvester Co., of America,

Inc., Chicago, Ill.

NAILS (Cut.)

Reading Iron Co., Reading, Pa.

—and Spikes.

American Steel & Wire Co., Balto., Md.

Tennessee Coal, Iron & Railroad Co.,

Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngs-

town, Ohio.

NATURAL GAS COMPANIES.

(Offering Industrial and Commercial Opportunities.)

Arkansas Natural Gas Corp., Shreveport,

La.

OIL (Fuel and Gas.)

Gulf Refining Co., Pittsburgh, Pa.

—Cups.

Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.

Georgia Iron Works, Augusta, Ga.

McLanahan Stone Machine Co., Hollidays-

burg, Pa.

ORNAMENTAL BRONZE**WORK.**

Heath Co., J. S., Waukegan, Ill.

Michaels Art Bronze Co., Covington, Ky.

—Iron Work.

Roanoke Iron & Bridge Wks., Roanoke,

Va.

Sneed Architectural Iron Works, Louis-

ville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

PACKAGE SERVICE (Corrugated Paper.)

Hinde & Dauch Paper Co., Sandusky, O.

PACKING (Asbestos, Metallic,

Rubber, Leather, etc.)

Jenkins Bros., New York, N. Y.

Republic Rubber Co., Youngstown, Ohio

—Protection (Freight Ship-

ments).

Kimberly Clark Corp., Chicago, Ill.

PAINT (Aluminum.)

Aluminum Co. of America, Pittsburgh, Pa.

—(Metal Surfaces.)

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jos., Jersey City,

N. J.

—(Mill White, For Interior.)

Aluminum Co. of America, Pittsburgh, Pa.

Sonneborn Sons, Inc., L., New York.

—(Preservative.)

Cabot, Inc., Samuel, Boston, Mass.

Foster Co., Benjamin, Philadelphia, Pa.

PANELBOARDS.

Adam Elec. Co., Frank, St. Louis.

PAPER BOXES (Corrugated,

Shipping.)

Hinde & Dauch Paper Co., Sandusky, O.

PARTITIONS (Metal, Folding,

Rolling.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Lupton's Sons Co., David, Phila., Pa.

—(Sectionfold, Rolling, Wood.)

Wilson Corp., The, J. G. New York.

PATENT ATTORNEYS.

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Eaton, Paul B., Charlotte, N. C.

Sammet, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)

Hass Pattern Co., A. W., Atlanta, Ga.

PAVING Blocks (Creosoted

Wood.)

American Creosote Works, New Orleans.

—(Brick.)

National Paving Brick Mfrs. Assn.,

Washington, D. C.

—Mixers.

National Equipment Corp. (Koehring, T

L. Smith), Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.

Chattanooga Boiler & Tank Co., Chatta-

nooga, Tenn.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Des Moines Steel Co., Pitts-

burgh, Pa.

Smith Co., S. Morgan, York, Pa.

PERFORATED METAL.

Chicago Perforating Co., Chicago, Ill.

Erdie Perforating Co., Rochester, N. Y.

Harrington & King Port. Co., Chicago.

Hendrick Mfg. Co., Carbondale, Pa.

Manhattan Perforated Metal Co., Inc.,

Long Island City, N. Y.

Mundt & Sons, Charles, Jersey City, N. J.

PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md.

—(Machinery.)

McLanahan-Stone Machine Co., Hollidays-

burg, Pa.

PIG-IRON.

Republic Steel Corp., Youngstown, Ohio.

Siess-Sherfield Steel & Iron Co., Birming-

ham, Ala.

Tennessee Coal, Iron & Railroad Co., Bir-

mingham, Ala.

PILE SHOES.

Janney, Jr., Jos. A., Phila., Pa.

PILING (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston,

S. C.

Savannah Creosoting Co., Inc., Savannah.

Wales Wood-Preserving Co., Norfolk, Va.

—(Steel Sheet.)

Carnegie Steel Co., Pittsburgh, Pa.

Zelnicker Supply Co., W. A., St. Louis.

PILLOW BLOCKS.

Goldens' Fdry. & Mch. Co., Columbus, Ga.

PIPE.

Albert & Davidson Pipe Corp., Brooklyn,

N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.

Armco Culvert Mfrs. Assn., Middletown,

Ohio.

Birmingham Boiler & Engr. Co., Bir-

mingham, Ala.

Central Pipe & Sup. Co., Charleston,

W. Va.

Greenpoint Iron & Pipe Co., Inc., Brook-

lyn, N. Y.

Hudson Pipe & Sup. Co., Bayonne, N. J.

Maryland Pipe & Steel Corp., Baltimore,

Md.

National Tube Co., Pittsburgh, Pa.

Pittsburgh Piping & Equip. Co., Pitts-

burgh, Pa.

Power Piping Co., Pittsburgh, Pa.

—(Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham

Cast Iron Pipe Research Assn., Chicago.

Central Foundry Co., The, New York, N. Y.

Glamorgan Pipe & Fdry. Co., Lynchburg,

Va.

National Cast Iron Pipe Co., Birmingham,

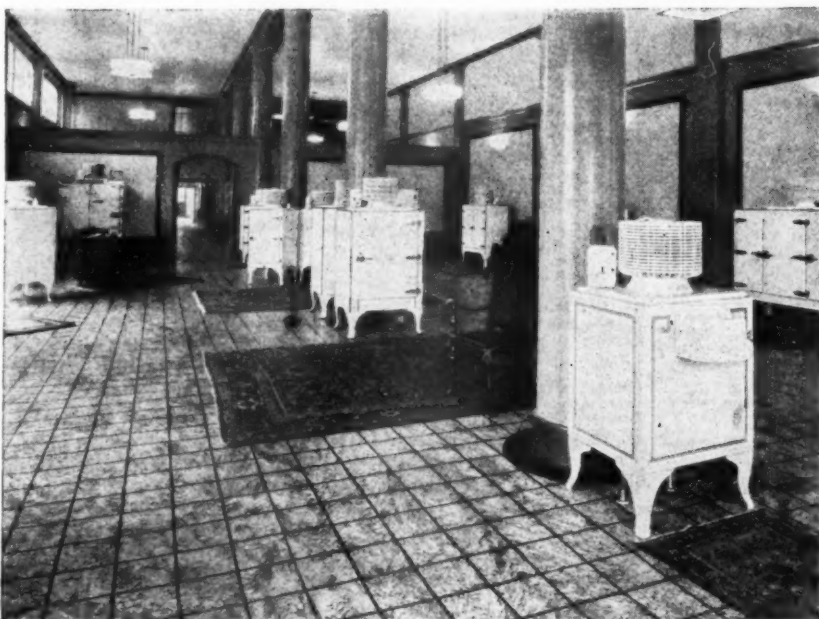
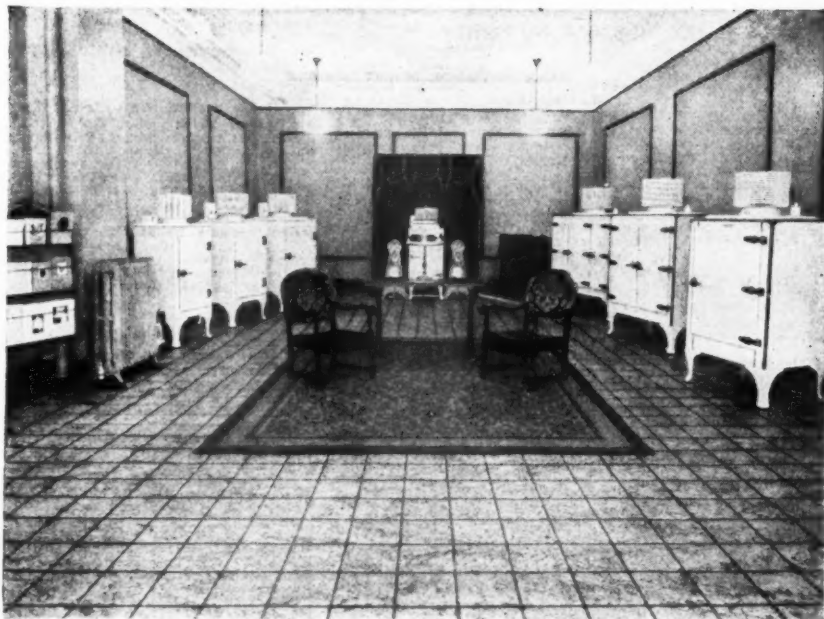
Ala.

U. S. Pipe & Foundry Co., Burlington,

N. J.

—(Dredge.)

FLOORS as modern as the ELECTRIC REFRIGERATOR



Two show-rooms in the chain of the Erco Corporation, Buffalo, distributors of General Electric refrigerators. The Bonded Floors of *Sealex* Linoleum are in a comparatively inexpensive "ready-made" pattern, despite their distinctive, custom-made appearance. Installed by H. N. Ness Carpet Co., Buffalo, Authorized Contractors of Bonded Floors.

BONDED FLOORS

Bonded Floors are floors of *Sealex* Linoleum and *Sealex* Treadlite Tile, backed by a Guaranty Bond issued by the U. S. Fidelity and Guaranty Company. Authorized Contractors of Bonded Floors are located in principal cities.

MODERN merchandise demands a modern setting. Customers stepping on these floors get the idea that your store is in step with the times.

Furthermore, people with money to spend prefer to spend it in an attractive and prosperous-looking place. That's human nature. That's why a handsome Bonded Floor quickly pays for itself in the extra business it brings in.

Think it over. Then talk it over with an Authorized Contractor of Bonded Floors or with one of our service men.

Patterns? He'll show you a whole bookful of new designs in *Sealex* Linoleum — fine examples of all the modern trends in floor decoration. Or, if you prefer, he'll design you a floor to order and carry it out in *Sealex* Treadlite Tile. Trade-marks or other emblems can be incorporated into these custom-made floors.

Thanks to the exclusive *Sealex* Process of manufacture, Bonded Floors are spot-proof, stain-proof and easy-to-clean. Also, they are notably resilient and quiet.

Write our Department M for figures and more facts about these business-building floors and the expert installation service that goes with them.

CONGOLEUM-NAIRN INC.

General Office . . . Kearny, N. J.



PLATES (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Ingersoll & Rand Co., New York, N. Y.
Tennessee Coal, Iron & Railroad Co., Birmingham.

PNEUMATIC TOOLS.

Chicago Pneumatic Tool Co., New York.
Ingersoll Rand Co., New York, N. Y.

POLES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.

(Steel.)

Bates Steel Corp., Walter, Gray, Ind.

(Tubular, Steel.)

National Tube Co., Pittsburgh, Pa.

(Zinc Meta Arsenite Treated.)

Curtin-Hove Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

PORTABLE HOUSES (Metal.)

Straden Steel Corp., Tulsa, Okla.

POST CAPS.

Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)

U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mfg. Co., Indianapolis.
Golden's Fdy. & Mch. Co., Columbus, Ga.
Morse Chain Co., Ithaca, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Co., J. S. Mason, Ga.
Wood's Sons Co., T. B. Chambersburg, Pa.

(Pumps.)

Luitwieler Pumping Engine Co., Rochester, N. Y.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City.

PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Bipley Foundry & Machine Co., Ripley, O.
—(Metal Stamping.)
Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)

Smith & Son Co., Oscar T., Baltimore Md.
Young & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)

Gas-O-Flame Store Works, Port Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., R. D., Phila., Pa.

PULLER-JACKS.

Edelblute Co., T. H., Pittsburgh, Pa.

PULLEYS (Friction Clutch.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B. Chambersburg, Pa.

(Motor and Machine.)

American Pulley Co., Philadelphia, Pa.
—(Steel Split.)
American Pulley Co., Phila., Pa.
—Shafting and Hangers.
American Pulley Co., Phila., Pa.
Golden's Fdy. & Mch. Co., Columbus, Ga.
Wood's Sons Co., T. B. Chambersburg, Pa.

PULVERIZED COAL EQUIPMENT.

Combustion Engr. Corp., New York, N. Y.
Fuller Lehigh Co., Fullerton, Pa.
Whitney Corp., Harvey, Ill.

PULVERIZERS (See Crushing and Pulverizing Machinery.)**PUMPING MACHINERY.**

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.

Chain Belt Co., Milwaukee, Wis.
Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Keystone Pump & Drill Co., Beaver Falls, Pa.

Luitwieler Pumping Engine Co., Rochester, N. Y.
Myers & Bro. Co., The F. E., Ashland, Ohio.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Platt Iron Works, Dayton, Ohio.
Union Steam Pump Co., Battle Creek, Mich.
Viking Pump Co., Cedar Falls, Iowa.
Virginia Mch. & Well Co., Richmond, Va.

PUMPS (Air.)

Manistee Iron Works Co., Manistee, Mich.

(Air Lift.)

Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

(Boiler Feed.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Myers & Bro. Co., The F. E., Ashland, O.

(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Emerson Pump & Valve Co., Alexandria, Va.

Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.
Jaeger Machine Co., Columbus, Ohio.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.
Morris Machine Wks., Baldwinville, N. Y.
Novo Engine Co., Lansing, Mich.
Union Steam Pump Co., Battle Creek, Mich.

(Contractors.)

Emerson Pump & Valve Co., Alexandria, Va.

Erie Pump & Engine Wks., Medina, N. Y.
Novo Engine Co., Lansing, Mich.

(Deep Well.)

Cook, Inc., A. D., Lawrenceburg, Ind.
Keystone Pump and Drill Co., Beaver Falls, Pa.
Layne & Bowler, Inc., Memphis, Tenn.
Luitwieler Pumping Engine Co., Rochester, N. Y.

(Diaphragm.)

Novo Engine Co., Lansing, Mich.

(Hydraulic.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

(Power.)

Platt Iron Works, Dayton, Ohio.
Sterling Engine Co., Buffalo, N. Y.

(Pulverized Coal.)

Fuller Lehigh Co., Fullerton, Pa.

(Rotary.)

Viking Pump Co., Cedar Falls, Iowa.

(Sand and Dredging.)

Ellicott Machine Corp., Baltimore, Md.
Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

(Steam.)

Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Emerson Pump & Valve Co., Alexandria, Va.

Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

Platt Iron Works, Dayton, Ohio.
Union Steam Pump Co., Battle Creek, Mich.

(Vacuum.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.

(Water Works.)

Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

PUNCHING and SHEARING MACHINERY.

Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.

RACK RAKES.

Newport News Shipbuilding & Drydock Co., Newport News, Va.

RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

RAILINGS (Iron Pipe.)

Pipe Railing Constr. Co., Long Island City, N. Y.

—and Grilles, Iron and Brass.

(Banks and Offices.)
Ludlow Saylor Wire Co., The St. Louis, Mo.

RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.
Whitney Corp., Harvey, Ill.

—Equipment and Supplies (Used.)

Birmingham Rail & Loco. Co., Birmingham.

Equip. Sales & Rentals Co., Pittsburgh.

Levis & Co., Henry, Philadelphia, Pa.

Smith & Co., W. M., Birmingham, Ala.

Southern Iron and Equip. Co., Atlanta.

Zelnicker Supply Co., W. A., St. Louis.

—(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.

Frank, M. K., Pittsburgh, Pa.

Koppel Ind. Car & Equip. Co., Koppel, Pa.

Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.

Central of Georgia Rwy., Savannah, Ga.

Missouri - Kansas - Texas Lines, Dallas, Texas.

Missouri Pacific Lines, St. Louis, Mo.

Model Land Company, Flagler System, St. Augustine, Fla.

Norfolk & Western Railway, Roanoke, Va.

Tennessee Central Railway, Nashville, Tenn.

RAILS (New and Used.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Carnegie Steel Co., Pittsburgh, Pa.

Frank, M. K., Pittsburgh, Pa.

Levis & Co., Henry, Philadelphia, Pa.

Perry, Buxton, Doane Co., Philadelphia.

Robinson & Orr, Pittsburgh, Pa.

Smith & Co., W. M., Birmingham, Ala.

Southern Iron & Equip. Co., Atlanta, Ga.

Sweet's Steel Co., Williamsport, Pa.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Weiler & Co., Birmingham, Ala.

Zelnicker Supply Co., W. A., St. Louis.

RAILWAYS (Industrial.)

Easton Car & Construction Co., Easton, Pa.

Koppel Ind. Car & Equip. Co., Koppel, Pa.

—(Marine.)

Charleston Dry Dock and Machine Co., Charleston, S. C.

RECEPTACLES (Self-foaming — Waste Paper.)

Whitakes Paper Co., Baltimore, Md.

REELS and SPOOLS. (Pressed Metal.)

American Pulley Co., Philadelphia, Pa.

REFRACORIES.

Harbison-Walker Refractories Co., Pittsburgh.

North American Refractories Co., Cleveland, Ohio.

Taylor Sons Co., Charles, Cincinnati.

REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)**REINFORCING for Concrete.**

American Steel and Wire Co., Balto., Md.

Carnegie Steel Co., Pittsburgh, Pa.

Connors Steel Co., Birmingham, Ala.

Dietrich Brothers, Baltimore, Md.

Gulf States Steel Co., Birmingham, Ala.

Knoxville Iron Co., Knoxville, Tenn.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Southern Engineering Co., Charlotte, N. C.

RESURFACING MATERIALS (Floor, Roof and Roadways.)

Stonhard Co., Phila., Pa.

RETORTS (Special Process—Riveted or Welded.)

Biggs Boiler Works, Akron, Ohio.

RIVER & HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)

Arundel Corp., The, Baltimore, Md.

Atlantic Gulf and Pacific Co., New York.

Kansas City Bridge Co., Kansas City.

RIVETS.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

ROAD and Street Machinery.

Acme Road Mchry. Co., Frankfort, N. Y.

Austin-Western Road Mchry. Co., Chicago.

Blaw-Knox Co., Pittsburgh, Pa.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., San Leandro, Cal.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Universal Crane Co., Lorain, Ohio.

—and Street Material.

Boxley & Co., W. W., Roanoke, Va.
Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.
Woodstock Slag Corp., Birmingham, Ala.

—Graders and Scrapers.

Acme Road Mchry. Co., Frankfort, N. Y.
Austin-Western Road Mchry. Co., Chicago.
Caterpillar Tractor Co., San Leandro, Cal.

—Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.

—Reinforcement (Welded Fabric.)

American Steel & Wire Co., Balto., Md.

—Rollers (Steam and Gasoline.)

Acme Road Mchry. Co., Frankfort, N. Y.
Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.

—Erie Machine Shops, Erie, Pa.

Huber Mfg. Co., The, Marion, Ohio.

—Rollers (For Concrete Work.)

Macon Concrete Roller Co., Macon, Ga.

—Scarifiers.

Austin-Western Road Mchry. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.

ROOFING (Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa.

Eternit, Inc., St. Louis, Mo.

—and Siding (Composition.)

Eternit, Inc., St. Louis, Mo.

—and Siding (Metal.)

American Rolling Mill Co., Middletown, O.

American Sheet and Tin Plate Co., Pittsburgh, Pa.

Milcor Steel Co., Milwaukee, Wis.

Moeschl-Edwards Corr. Co., Cincinnati, O.

Republic Steel Corp., Youngstown, Ohio.

Robertson Co., H. H., Pittsburgh.

Ryerson & Son, Jos. T., St. Louis and New York.

Youngstown Sheet and Tube Co., Youngstown, O.

—Tile, Cement (Interlocking Flat, Channel Glass.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—Tiles.

Amer. Cement Tile Mfg. Co., Pittsburgh

ROPE (Manilla, Sisal, Hemp, etc.)

Broderick & Bascom Rope Co., St. Louis

—Drives.

Wood's Sons Co., T. B., Chambersburg, Pa.

RULES (Steel.)

Lufkin Rule Co., Saginaw, Mich.

SAND.

Arundel Corp., Baltimore, Md.

Friend & Co., Inc., Petersburg, Va.

SANITARY Drinking Fountains.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

SASH (Industrial.)

Detroit Steel Products Co., Detroit, Mich.

—(Operating Devices.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel.)

Detroit Steel Products Co., Detroit, Mich.

—(Steel, Basement, Ventilating.)

Detroit Steel Products Co., Detroit, Mich.

SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

SAW RIGS.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.

SAWS. (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

—(Portable, Electric, Hand.)

Wappat, Incorporated, Pittsburgh, Pa.

SCAFFOLDING (Wooden.)

Patent Scaffolding Co., Chicago, Ill.

SCALES (Industrial, Platform.)

American Kren Scale Co., New York City.

—(Textile.)

American Kron Scale Co., New York City.

SCHOOLS (Correspondence.)

International Correspondence Schools, Scranton, Pa.

SCOOPS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

—Wheeled.

Riddell Co., W. A., Bucyrus, Ohio.

SCRAPERS (Drag and Wheel.)

Austin-Western Road Machy. Co., Chicago. Sauerman Bros., Chicago, Ill.

SCRAP IRON AND STEEL.

Hunts Sons, M. J., Philadelphia, Pa. Perry, Buxton, Doane Co., Philadelphia. Smith & Co., W. M., Birmingham, Ala.

SCREENING (For Concrete and Road Construction.)

American Limestone Co., Knoxville, Tenn.

SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)

Chicago Perforating Co., Chicago, Ill. Erdie Perforating Co., Rochester, N. Y. Hendrick Mfg. Co., Carbondale, Pa. Ludlow Saylor Wire Co., The St. Louis, Mo. McLanahan-Stone Machine Co., Hollidaysburg, Pa. Mundt & Sons, Charles, Jersey City, N. J. Universal Crusher Co., Cedar Rapids, Iowa.

SCREW-Machine Products.

Progressive Mfg. Co., Torrington, Conn.

SCREWS (Machine.)

Progressive Mfg. Co., Torrington, Conn.

SEAWALLS.

Shore-Line Builders, Inc., Jacksonville, Fla.

SEPARATORS (Dust.)

Raymond Bros., Impact Pulv. Co., Chicago.

SEWAGE Disposal Apparatus.

Pacific Flush-Tank Co., New York, N. Y.

SEWER Joint Compounds.

Pacific Flush-Tank Co., New York, N. Y.

—Pipe (Vitrified.)

Bannon Pipe Co., Louisville, Ky. Cambria Clay Products Co., Blackfork, O. Dee Co., Wm. E., Oak Hill, Ohio. Lee Clay Products Co., Clearfield, Ky. Owensboro Sewer Pipe Co., Owensboro, Ky.

SEWER PIPE MACHINERY (Concrete.)

Quinn Wire & Iron Works, Boone, Iowa.

SHADES (Offset.)

Hough Shade Corp., Chicago, Ill.

SHAFTING.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

—(Cold Rolled.)

Bliss & Laughlin, Inc., Harvey, Ill.

—(Flexible.)

Strand & Co., N. A., Chicago, Ill.

—Material (Tubular.)

National Tube Co., Pittsburgh, Pa.

SHARPENING Stones.

Carborundum Co., Niagara Falls, N. Y.

SHEET Metal Work.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

Skinner Bros. Mfg. Co., St. Louis, Mo.

—Metal Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y. Whitney Metal Tool Co., Rockford, Ill. Yoder Co., The, Cleveland, Ohio.

—Steel and Iron.

American Rolling Mill Co., Middletown, O. American Sheet and Tin Plate Co., Pittsburgh, Pa. Bethlehem Steel Co., Bethlehem, Pa. Granite City Steel Co., Granite City, Ill. Gulf States Steel Co., Birmingham, Ala. Republic Steel Corp., Youngstown, Ohio. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Youngstown Sheet & Tube Co., Youngstown, O.

SHEETS (Asbestos.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.

—(Steel—Asbestos Covered.)

Robertson Co., H. H., Pittsburgh, Pa.

SHELVING (Unit.)

Lupton's Sons Co., David, Phila., Pa.

SHINGLES (Asbestos.)

Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.

—(Stain.)

Cabot, Inc., Samuel, Boston, Mass.

SHIPPING CARTONS (Corrugated Paper.)

Hinde & Dauch Paper Co., Sandusky, O.

SHOVELS (Hand.)

American Mfg. Co., Chattanooga, Tenn.

—(Steam, Gas and Electric Power.)

Bucyrus-Erie Co., Erie, Penna. Hamischfeger Corp., Milwaukee, Wis. Industrial Brownhoist Corp., Cleveland, O. National Equipment Corp. (Koshring Insley), Milwaukee, Wis. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. Thew Shovel Co., The, Lorain, Ohio. Universal Power Shovel Co., Milwaukee, Wis.

SHUTTERS (Steel.)

Merchant & Evans Co., Philadelphia, Pa.

—(Steel and Wood Bifolding.)

Kinnear Mfg. Co., The, Columbus, Ohio.

SILICATE OF SODA.

Grasselli Chemical Co., Inc., Birmingham, Ala.

SITES (Manufacturing.)

Alabama Power Co., Birmingham, Ala.

Arkansas Natural Gas Corp., Shreveport, La.

Atlanta and West Point R. R., Atlanta, Ga.

Brown & Co., Chattanooga, Tenn.

Central of Georgia Rwy., Savannah, Ga.

Central Power & Light Co., San Antonio, Tex.

Fort Worth Chamber of Commerce, Fort Worth, Texas.

Galveston City of, Galveston, Texas.

Georgia Power Co., Atlanta, Ga.

Jacksonville, City of Jacksonville, Florida.

Missouri - Kansas - Texas Lines, Dallas, Texas.

Missouri Pacific Line, St. Louis, Mo.

Model Land Company, (Flagler System), St. Augustine, Fla.

Norfolk & Western Railway, Roanoke, Va.

Tennessee Central Railway, Nashville, Tenn.

Texas Power & Light Co., Dallas, Texas.

SKYLIGHTS.

Milcor Steel Co., Milwaukee, Wis.

Robertson Co., H. H., Pittsburgh, Pa.

SLABS (Concrete Floor.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Concrete Roof.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

SLAG, For Concrete.

Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.)

Sloss-Sheffield Steel and Iron Co., Birmingham, Ala.

Woodstock Slag Corp., Birmingham, Ala.

SLINGS (Chain.)

Woodhouse Chain Works, Trenton, N. J.

—(Wire Rope.)

Roebeling's Sons Co., John A., Trenton, N. J.

SLUICE GATES AND APPLIANCES.

Smith Co., S. Morgan, York, Pa.

SNATCH BLOCKS (For Wire and Manila Rope.)

Patterson Co., W. W., Pittsburgh.

SPADES.

American Mfg. Co., Chattanooga, Tenn.

SPEED REDUCERS.

Earle Gear & Mach. Co., Phila., Pa.

Morse Chain Co., Ithaca, N. Y.

SPIKES, (Railroad, Ship.)

Bethlehem Steel Co., Bethlehem, Pa.

Republic Steel Corp., Youngstown, Ohio.

Sweet's Steel Co., Williamsport, Pa.

SPINNINGS (Metal for Aircraft.)

Benson Brass & Chandler Works, Kansas City, Mo.

SPRINGS (Machinery, Railway, Spiral Steel.)

American Steel & Wire Co., Balto., Md.

—(Wire—All Kinds.)

American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.)

Grinnell Co., Inc., Providence, R. I.

SPROCKETS.

Diamond Chain & Mfg. Co., Indianapolis

Morse Chain Co., Ithaca, N. Y.

STACKS (Iron and Steel.)

Biggs Boiler Works Co., Akron, Ohio.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge and Iron Works, Atlanta, Ga.

Downingtown Iron Wks., Downingtown, Pa.

Hammond Iron Works, Warren, Pa.

Hedges Walsh Weldner Co., Chattanooga, Tenn.

Ingalls Iron Works Co., Birmingham, Ala.

Lombard Iron Works & Supply Co., Augusta, Ga.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

U. S. Pipe & Foundry Co., Burlington, N. J.

Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.)

Cabot, Inc., Samuel, Boston, Mass.

STAIR Steps (Safety.)

Irving Iron Works Co., Long Is. City, N.Y.

—Treads.

Bates Steel Corp., Walter, Gray, Ind.

Central Iron & Steel Co., Harrisburg, Pa.

STAMPING (Sheet Metal.)

American Pulley Co., Philadelphia, Pa.

—Steel (All Kinds.)

Commercial Shearing & Stamping Co., Youngstown, Ohio.

STANDPIPES.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.

Hammond Iron Works, Warren, Pa.

Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Republic Steel Corp., Youngstown, Ohio.

U. S. Pipe & Foundry Co., Burlington, N. J.

Virginia Bridge & Iron Co., Roanoke, Va.

Wilmington Iron Works, Wilmington, Del.

Youngstown Sheet & Tube Co., Youngstown, O.

Zachary & Sons, Inc., Jos. T., St. Louis and New York.

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Zachary & Sons, Inc., Jos. T., St. Louis and New York.

Zachary & Sons, Inc., Jos. T., St. Louis and New York.

Birmingham Boiler & Engr. Co., Bir-

mingham, Ala.

Bristol Steel &

TANKS (Air Compressor.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.

Seafie & Sons, Wm. B., Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa.**—(Elevated Steel.)**Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.**—(Elevated Wood.)**Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.**—(Iron and Steel.)**Air-Tight Steel Tank Co., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.
Biggs Boiler Works Co., Akron, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
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Lombard Iron Works & Supply Co., Augusta, Ga.
McClintic-Marshall Co., Pittsburgh, Pa.Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Seafie & Sons, Wm. B., Oakmont, Pa.Schofield's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.

Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Seamless Steel.)Janney, Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.**—(Storage, Oil, etc.)**Biggs Boiler Works, Akron, Ohio.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.Chicago Bridge & Iron Works, Atlanta, Ga.
Downingtown Iron Works, Downingtown, Pa.Hammond Iron Works, Warren, Pa.
Ingalls Iron Works Co., Birmingham, Ala.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

—(Wood.)Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Virginia Mch. & Well Co., Richmond, Va.

Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.

—(Wood Picking.)

Woolford Wood Tank Mfg. Co., G., Paschall P. O., Philadelphia.

TAPE (Insulating.)Okonite Co., New York, N. Y.
—(Measuring.)
Lufkin Rule Co., Saginaw, Mich.**TAX SPECIALISTS.**Ernst & Ernst, New York, N. Y.
Harrison, Wm. Henry, Washington, D. C.
Le Baron, E. T., Jacksonville, Fla.**TELEPHONE SERVICE.**

American Telephone & Telegraph Co.

TERRA COTTA (Ornamental.)

Atlanta Terra Cotta Co., Atlanta, Ga.

TEXTILE CHEMICALS.

Grasselli Chemical Co., Inc., Birmingham, Ala.

TILE (Cement Roofing.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Cork Composition.)

Congoleum-Nairn Inc., Kearny, N. J.

—(Cork Flooring.)

Congoleum-Nairn Inc., Kearny, N. J.

—(Floor.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Hollow Building.)

Cambria Clay Products Co., Blackfork, Ohio.

—(Roof.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Sewer.)

Lee Clay Products Co., Clearfield, Ky.

TIMBER Fittings.

Duplex Hanger Co., Cleveland, Ohio.

—(Crescoted.)Amer. Crescote Wks., Inc., New Orleans.
Amer. Crescoting Co., Inc., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.**TIME Recorders.**

Kaiser Klock Co., L. E., Baltimore, Md.

TIN AND TERNE PLATES.American Sheet & Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOBACCO MACHINERY.

Ripley Foundry & Machine Co., Ripley, O.

TOILET TISSUE.

Victoria Paper Mills Co., Fulton, N. Y.

TOOLS (Measuring.)

Lufkin Rule Co., Saginaw, Mich.

—(Woodworking—Portable.)Electric, Hand.
Wappat, Incorporated, Pittsburgh, Pa.**TORCHES (Blow.)**

Wall Mfg. Supply Co., P., Pittsburgh, Pa.

TOWERS (Electric Transmission.)American Bridge Co., New York, N. Y.
Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Ala.

Nashville Bridge Co., Nashville, Tenn.

—(Radio.)

Bessemer Galv. Wks., Birmingham, Ala.

—(Steel and Wood.)
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

TRACK (Portable or Permanent.)

Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)Atlas Car & Mfg. Co., The, Cleveland, O.
Caterpillar Tractor Co., San Leandro, Cal.
Clark Tractor Co., Battle Creek, Mich.Cleveland Tractor Co., Cleveland, Ohio.
International Harvester Co., of America, Inc., Chicago, Ill.**—(Road.)**Caterpillar Tractor Co., San Leandro, Cal.
Cleveland Tractor Co., Cleveland, Ohio.—(Attachments (Side Boom).)
W-K-M Co., Inc., Houston, Texas.**TRAILERS (Four Wheel.)**

Electric Wheel Co., Quincy, Ill.

—(Heavy Duty.)

Electric Wheel Co., Quincy, Ill.

—(Industrial.)

Easton Car & Construction Co., Easton, Pa.

—(Pole.)

Electric Wheel Co., Quincy, Ill.

TRAMWAYS (Aerial Wire Rope.)American Steel & Wire Co., Balto., Md.
Broderick & Bascom Rope Co., St. Louis.
Lechen & Sons Rope Co., A., St. Louis.**TRANSFORMERS.**General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**—(Used.)**

Electric Service Co., Cincinnati, Ohio.

TRANSMISSION TOWERS (Galvanized.)Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.**TRENCH MACHINERY. See Excavators (Trench.)****TRESTLES (Wooden.)**

Patent Scaffold Co., Chicago, Ill.

TRI-SODIUM PHOSPHATE.

Grasselli Chemical Co., Inc., Birmingham, Ala.

TROLLEY WHEELS (Self Oiling.)

Moccasin Bushing Co., Chattanooga, Tenn.

TRUCK CRANES.

Universal Crane Co., Lorain, O.

TRUCKS (Dry Kiln.)

Moore Dry Kiln Co., Jacksonville, Fla.

—(Industrial.)

Atlas Car & Mfg. Co., The, Cleveland, O.

Lansing Co., Lansing, Mich.

Nutting Truck Co., Chicago, Ill.

—(Motor.)

International Harvester Co., of America, Inc., Chicago, Ill.

—(Platform, Freight, Mill, Factory, etc.)
American Pulley Co., Philadelphia, Pa.Clark Tractor Co., Battle Creek, Mich.
Electric Wheel Co., Quincy, Ill.
Nutting Truck Co., Chicago, Ill.**—(Steel Shop.)**

Angle Steel Stool Co., Plainwell, Mich.

TUBES (Boiler.) See Boiler Tubes.**TUBING (Metal.)**

Boiler Tube Co., of America, Pittsburgh, Pa.

—(Seamless Steel.)National Tube Co., Pittsburgh, Pa.
Timken Rolling Bearing Co., Canton, O.**TURBINES (Hydraulic.)**Cook, Inc., A. D., Lawrenceburg, Ind.
Davis Foundry & Mach. Works, Rome, Ga.
Leffel & Co., The, James, Springfield, O.

Smith Co., S. Morgan, York, Pa.

—(Steam.)Allis-Chalmers Mfg. Co., Milwaukee, Wis.
DeLaval Steam Turbine Co., Trenton, N. J.General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**TURNBUCKLES.**

Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

TURNABLES.American Bridge Co., New York, N. Y.
Easton Car & Construction Co., Easton, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable for Motor Trucks.)
Blaw-Knox Co., Pittsburgh, Pa.**UNIONS.**

Dart Mfg. Co., E. M., Providence, R. I.

UNIT HEATERS.Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.**VALVES.**Jenkins Bros., New York, N. Y.
Ludlow Valve Mfg. Co., The, Troy, N. Y.Lunkenheimer Co., The, Cincinnati, Ohio.
Merco Nordstrom Valve Co., San Francisco, Cal.Mueller Co., Decatur, Ill.
Vogt Brothers Mfg. Co., Louisville, Ky.Vogt Machine Co., Henry, Louisville, Ky.
Westinghouse Traction Brake Co., Wilmerding, Pa.—(Acid Proof.)
Lunkenheimer Co., The, Cincinnati, O.**—(Gate.)**Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkenheimer Co., The, Cincinnati, Ohio.

Wood & Co., E. D., Philadelphia, Pa.

VENTILATING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo.

VENTILATORS (Roof.)Merchant & Evans Co., Philadelphia, Pa.
Milcor Steel Co., Milwaukee, Wis.

Robertson Co., H. H., Pittsburgh, Pa.

WADDING (Crepe, for package protection.)

Kimberly Clark Corp., Chicago, Ill.

WALL HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

WARDROBES (Hygienic, School.)

Wilson Corp., The J. G., New York.

WATCHMAN'S PORTABLE CLOCKS.

Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. E., Balto., Md.

WATERPROOFING (For Brick, Concrete, Granite.)Asphalt Products Co., Syracuse, N. Y.
Foster Co., Benjamin, Philadelphia, Pa.

Sennepson, Sons, Inc., L., New York.

WATER Purification.

Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Seafie & Sons, Wm. B., Oakmont, Pa.

—Softening Apparatus (Purifying.)
American Water Softener Co., Phila., Pa.

International Filter Co., Chicago, Ill.

—Works Supplies and Appliances.
Amer. Cast Iron Pipe Co., Birmingham.

Cast Iron Pipe Research Assn., Chicago.

Cook, Inc., A. D., Lawrenceburg, Ind.
Giamorgan Pipe & Fdry. Co., Lynchburg, Va.Leadite Co., The, Philadelphia, Pa.
Mueller Co., Decatur, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

WELDING APPARATUS (Electric Arc.)General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**WELL CONTRACTORS (Oil, Artesian, etc.)**

Virginia Mach. & Well Co., Richmond, Va.

WHEELBARROWS.Lansing Co., Lansing, Mich.
Sterling Wheelbarrow Co., Milwaukee**WHEELS AND AXLES.**

Carnegie Steel Co., Pittsburgh, Pa.

WINCHES.Sagen Derrick Co., Chicago, Ill.
Schultz & Son, A. L., Chicago, Ill.**WINDOW Frames and Sash (Metal.)**Bayley Co., The William, Springfield, O.
Lupton's Sons Co., David, Phila., Pa.**WINDOWS (Bronze Casement.)**

Michaels Art Bronze Co., Covington, Ky.

—(Steel Basement, Casement.)
Bayley Co., The William, Springfield, O.Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.

Milcor Steel Co., Milwaukee, Wis.

—(Steel Garage.)
Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

—(Steel Pivoted, Screened.)
Bayley Co., The William, Springfield, O.—(Ventilating.)
Bayley Co., The William, Springfield, O.

Detroit Steel Products Co., Detroit, Mich.

Lupton's Sons Co., David, Phila., Pa.

WIRE (All Kinds.)

American Steel & Wire Co., Chicago.

Reebing's Sons Co., John A., Trenton, N. J.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—(Barbed Wire, etc.)
American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Fence.)
Anchor Post Fence Co., Baltimore, Md.

Cyclone Fence Co., Waukegan, Ill.

Page Fence Association, Chicago, Ill.

—(Flat and Round.)
American Steel & Wire Co., Balto., Md.—(Galvanized and Annealed.)
American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

—(Telephone and Telegraph.)
American Steel & Wire Co., Balto., Md.—(Welding.)
American Steel & Wire Co., Chicago, Ill.

Reebing's Sons Co., John A., Trenton, N. J.

—Cloth (Iron, Steel, Copper, Brass, etc.)
Harrington & King Perf. Co., Chicago.

Ludlow Saylor Wire Co., The, St. Louis, Mo.

—Goods.
Cyclone Fence Co., Waukegan, Ill.—Netting.
Ludlow Saylor Wire Co., The, St. Louis, Mo.—Rope (Transmission, Hoisting, Haulage.)
American Steel & Wire Co., Chicago, Ill.

Broderick & Bascom Rope Co., St. Louis.

Lechen & Sons Rope Co., A., St. Louis.

Reebing's Sons Co., John A., Trenton, N. J.

—Rope Clips.
American Steel & Wire Co., Balto., Md.

Broderick & Bascom Rope Co., St. Louis.

WOOD (Preserved.)
Delaware Wood Preserving Co., Phila.**WOODWORKING MACHINERY**
Wappat, Incorporated, Pittsburgh, Pa.**ZINC CHLORIDE.**
Grasselli Chemical Co., Inc., Birmingham, Ala.**ZINC META ARSENITE (Wood Preservative.)**
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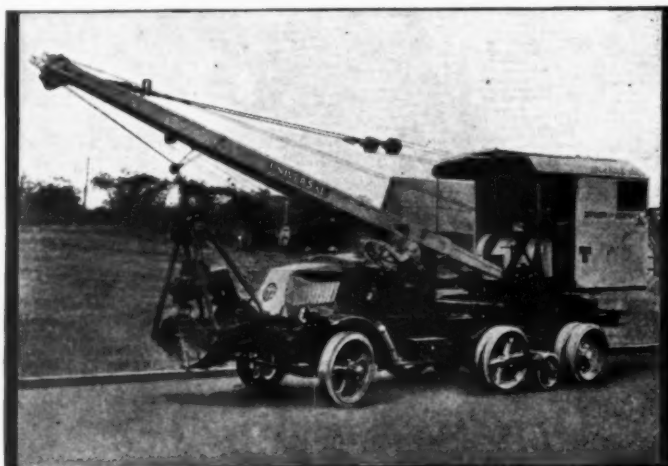
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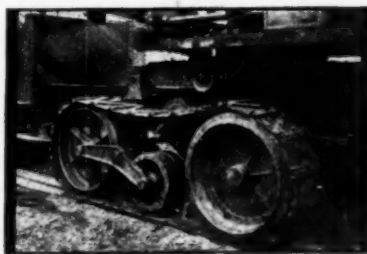
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